

USSR

DUMLER, I. L., and ETINGOF, R. N., Doklady Akademii Nauk SSSR, Vol 213,
No 5, 1973, pp 1197-1200

the first stages of the photoreceptor effect. From this standpoint, the
presence in the retina of an inhibitor of PDE, an enzyme that brings about
the decomposition of 3',5'-AMP, is of definite interest.

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1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--APPLICATION OF ACID BASE INDICATORS TO THE STUDY OF CHANGE IN PH
DURING THE ILLUMINATION OF OUTER SUGMENT OF RETINA PHOTORECEPTORS AND
AUTHOR-(02)-SHUKOLYUKOV, S.A., ETINGOF, R.N.
COUNTRY OF INFO--USSR
SOURCE--BIOFIZIKA 1970, 15(1), 112-19
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CHEMICAL INDICATOR, HYDROGEN ION CONCENTRATION, RETINA, VISUAL
PERCEPTION, BIOLOGIC PIGMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0011 STEP NO--UR/0217/70/015/001/0112/0119
CIRC ACCESSION NO--AP0105111
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105111

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPTS. WERE PERFORMED ON ISOLATED OUTER SEGMENTS OF BOVINE RETINA AND ON BOVINE RHODOPSIN (R. N. ETINGOF, S. A. SHUKOLYUKOV, AND A. A. ZHUCHIKHINA, 1967) UNDER RED ILLUMINATION (650 NM). BOTH THE OUTER SEGMENTS AND RHODOPSIN (IN THE FORM OF DIGITONIN MICELLES) BOUND BROMOTHYMOX BLUE (I) BUT NOT BROMOCRESOL PURPLE (II). THIS ALLOWED SIMULTANEOUS DETECTION OF THE CHANGES IN H PRIME POSITIVE CONCN. IN THE SEGMENT MEMBRANES AND IN THE SURROUNDING SOLN. THE PK OF I UPON BINDING INCREASED FROM 7.1 TO 8.5. THE ILLUMINATION OF "DARK" OUTER SEGMENTS OR DIGITONIN EXTS. OF RHODOPSIN WITH WHITE LIGHT (1500 LUX) DECREASED THE ABSORBANCE OF BOUND I WHILE IT INCREASED THE ABSORBANCE OF II. NO SIGNIFICANT DIFFERENCES IN I BINDING TO "DARK" SEGMENTS AND RHODOPSIN AND ILLUMINATED SEGMENTS WERE OBSD. THE CHANGES IN ABSORBANCE, PROBABLY DUE TO THE FORMATION OF A PH GRADIENT UNDER FUNCTIONAL LOAD, WERE DEPENDENT ON MANY POORLY CONTROLLABLE FACTORS AND COULD NOT BE INTERPRETED QUANT. FACILITY: I. M. SECHENOV INST. EVOL. PHYSIOL. BIOCHEM., LENINGRAD, USSR.

UNCLASSIFIED

ETINGOV, V.I.

Welding

*JRS 5/24/71
22 Feb 72
Dana & Alvin*

UDC 621.701.052:939.319
ENGINEERING THE RESIDUAL STRESSES IN WELD JOINTS OF FORCE-WELDING VESSELS BY
INTRODUCTION

[Article by Candidate of Engineering Sciences V. I. Ettingov and Engineer
V. B. Mikheev, Leningrad Scientific Research Institute of Chemical Machine
Building, Leningrad, Vostochnoye Proletarskoye, Russia, No 12, 1972, pp 38-40]

The necessity of removal or practical redistribution of residual stresses in weld seams of thick-wall vessels, working under pressure in chemical productions, has been associated with reliability of their operation.

The most widely used methods of removing residual stresses in weld seams are thermal (general or local high-temperature treatment) and mechanical, based on layer peeling of the weld seam metal. The method of welding stress removal, based on the interaction of residual and applied stresses [1], is also known. However, the absence of adequate theoretical and experimental data on the given question as well as the difficulties of its accomplishment, especially for weldments of complex shape and a complex stress system, prevent its broad practical application.

The process of residual stress interaction with applied external loads cannot be examined as two simply superposition of constituent components of stresses in relation to the direction of their action and magnitude. This process has been associated with the physical and mechanical nature of residual welder stresses and the nonuniformity of weld joint operation.

There are oriented microstresses in weld joints along with residual macrostresses [2,3]. The microstresses are formed both in the process of metal crystallization and in the process of weld joint deformation upon application of external loads. The oriented microstresses participate jointly with the macro-

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USSR

JDC 531.789.1.087.92.082.13

ETKIN, L. G., YANOVSKIY, V. YA.

"Vibration-Frequency Pickup for Measuring Torque and Axial Forces"

V sb. Vibratsionno-chastotn. preobrazovately Ch. 1 (Vibration-Frequency Converter--collection of works), Part 1, Moscow, "Energiya", 1970, pp 93-104 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 8, Aug 70, Abstract No 8.32.329)

Translation: Description is given of one- and two-component vibration-frequency pickups of torque and axial forces on rotating shafts, designed by NIKIMP (Sci-Res and Design Inst for Testing Equipment Instruments and Mass Measurement Devices). It is shown that the frequency output of converter allows efficiently to solve the problem of information transfer from the rotating shaft without the loss of accuracy during changing of the parameter of reader and also of the communication line. The design circuits of some torque pickups are presented and also accuracy characteristics of the pickups. Description is given of a non-contact current reader used in torque pickups. 9 ill., 1 table, 7 bibl. entries.

Resume

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USSR

UDC 621.382.21

VELICHKO, B. V., STRUKOV, I. A., ETKIN, V. S.

"A Procedure for Measuring the Parameters of Semiconductor Diodes Under Dynamic Conditions"

Moscow, Poluprovodnikovye Pribory i ikh Primeneniye, No 24, Izd-vo "Sovetskoye Radio", 1970, pp 226-235

Abstract: It is shown that accounting for the modulation of conductance enables determination of the pump modulation factor of the PN junction of mixer diodes under operating conditions. A measurement installation and procedure are described for finding the dynamic parameters of varactor and mixer diodes. The method is illustrated by experimental results of measurement of the capacitance modulation factor of varactor diodes and the pump modulation factor of mixer diodes under various loads from pump harmonics and combination frequencies. It is shown that accounting for the conductance branch of the admittance vector enables measurement of dynamic parameters of both varactor and mixer semiconductor diodes under various operating conditions. Seven figures, bibliography of seven titles.

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1/2 038 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INVESTIGATION OF THE SATURATION OF A REGENERATIVE SEMICONDUCTOR
PARAMETRIC AMPLIFIER IN THE CURRENT MODE -U-
AUTHOR-(03)-MANDKHIN, V.M., STRUKOV, I.A., ETKIN, V.S.
COUNTRY OF INFO--USSR *OK*
SOURCE--RADIOEKHNIKA I ELEKTRONIKA, VOL. 15, MAY 1970, P. 1068-1076
DATE PUBLISHED----MAY 70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--PARAMETRIC AMPLIFIER, SEMICONDUCTOR AMPLIFIER, HARMONIC
ANALYSIS, ELECTRIC CONDUCTANCE, PN JUNCTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0280 STEP NO--UR/0109/70/015/000/1068/1076
CIRC ACCESSION NO--AP0124039
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124039

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE SATURATION OF A REGENERATIVE SEMICONDUCTOR PARAMETRIC AMPLIFIER IN THE FORWARD CURRENT MODE OF OPERATION, ASSUMING THE ACTION OF THREE HARMONIC VOLTAGES (SIGNAL FREQUENCY, PUMPING FREQUENCY, AND THE DIFFERENCE FREQUENCY) AT THE P-N JUNCTION. THE SATURATION IN THIS MODE OF OPERATION IS CAUSED BY TWO MECHANISMS ASSOCIATED WITH (1) A CONDUCTANCE INTRODUCED IN THE PUMPING LOOP, WITH A POSITIVE ACTIVE PART, AND (2) DETUNING EFFECTS ARISING IN ALL THE LOOPS DUE TO A CHANGE IN THE PUMPING VOLTAGE LEVEL. THE DYNAMIC RANGE IN THE FORWARD CURRENT MODE IS AN ORDER OF MAGNITUDE SMALLER THAN THE RANGE IN THE BLOCKED JUNCTION MODE (AT EQUAL SMALL SIGNAL GAIN AND PUMPING POWER).

UNCLASSIFIED

USSR

UDC 621.382.2

BABENKO, S.P., VELICHKO, B.V., DRYDO, I.M., MIKHAYLOVA, E.A., STRUKOV, I.A., ETKIN, V.S.

"Experimental Investigation Of The Frequency Dependence Of The Impedance Of A P-N Junction In A Wide Range Of Frequencies"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), No 23, Moscow, "Sov.radio," 1970, pp 297-304 (from RZh--Elektronika i yeye primeneniya, No 12, December 1970, Abstract No 12B97)

Translation: An investigation is conducted of the frequency dependence of the impedance of a p-n junction in the 10--3600 MHz frequency range. The behavior is observed of such parameters of the p-n junction as total capacitance, conductance, and the Q-factor of the excess capacitance. A comparison is given of the experimental dependences with the frequency dependence of the computed diffusion conductivity of a p-n junction with a retarding field in the base. Conclusions are made with reference to the nature of the impedance of a p-n junction. 3 ill. 1 tab. 3 ref. Author's Abstract.

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USSR

UDC 621.382.2

VOROB'YEV, V. N., ~~EDWIN, V. S.~~

"Investigation of the Gunn Effect In A Magnetic Field"

Tomsk, V sb. Arsenid galliya (Gallium Arsenide -- Collection of Works), Issue 3, Tomsk University, 1970, pp 266-271 (from RZh-Elektronika i voye primeneniye, No 3, Mar 71, Abstract No 3B146)

Translation: An investigation is described of the character of the spectra and the power of the oscillations which are generated by specimens of GaAs in a transverse magnetic field. It is established that with a fixed orientation of a specimen, inclusion of a magnetic field increases the coherence and output power of the Gunn oscillations. A rule connected with the geometry of the specimen and its orientation in the magnetic field was not established. 5 ill., 2 ref. B.M.

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1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTIONS OF AZIRIDINES WITH RING EXPANSION --U--
AUTHOR--(03)--GLADYSHEVA, F.N., SINEOKOV, A.P., ETLIS, V.S.
COUNTRY OF INFO--USSR
SOURCE--USP. KHIM. 1970, 39(2), 235-58
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CRYSTALLIZATION, ISOMERIZATION, ETHYLENE OXIDE, INTERMOLECULAR
COMPLEX, ORGANIC NITROGEN COMPOUND, CYCLIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1659 STEP NO--UR/0074/70/039/002/0235/0258
CIRC ACCESSION NO--AP0112653
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112653

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 88 REFERENCES THROUGH 1968, DEALING WITH INTERMOL. AND INTRAMOL. CYCLIZATION REACTIONS OF AZIRIDINES, IN TERMS OF REACTIONS WITH CARBONYL COMPOS., CO SUB2 AND ITS ANALOGS ISOMERIZATION REACTIONS OF AZIRIDINES AND REACTIONS WITH ETHYLENE OXIDE AND NITRONES.

UNCLASSIFIED

L/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--PERCARBONATES CONTAINING PERALKYL GROUPS -U-

AUTHOR--(03)--TROFIMOV, N.N., BESHENOVA, YE.P., ETLIS, V.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3), 462-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL DECOMPOSITION, ORGANIC PEROXIDE, CARBONYL CHLORIDE,
CARBONATE, CARBON DIOXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1992/1575

STEP NO--UR/0366/70/006/003/0462/0465

CIRC ACCESSION NO--AP0112569

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112569

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE REACTION OF ROO-CH SUB2 CHR
PRIME1 OH WITH COCL SUB2 GAVE ROOCH SUB2 CHR PRIME1 O SUB2 CCL (I).
REACTING I WITH NA SUB2 O SUB2 GAVE (ROOCH SUB2 CHR PRIME1 O SUB2 C)
SUB2 O SUB2 (R AND R PRIME1 GIVEN): TERT-BU, H; TERT-BU, ME; PHCME
SUB2, H. THE REACTION OF I (R EQUALS TERT-BU) WITH (BZOO) SUB2 BA GAVE
TERT-BUOCH SUB2 CH SUB2 O SUB2 CO-OBZ. THE THERMAL DECOMP. OF
(TERT-BEOCH SUB2 CH SUB2 O SUB2 C) SUB2 O SUB2 (II) IN BENZENE GAVE CO
SUB2, TERT-BUOCH SUB2 CH SUB2 OH (III), TERT-BUO-CH SUB2 CHO, AND
HCHO. IN CUMENE AT 60DEGREES, II DECOMP. TO CO SUB2, III, AND
TERT-BEOCH SUB2 CH SUB2 O SUB2 COCME SUB2 PH, AND IN ISO-PROH, II GAVE
CO SUB2, III, AND ACETONE.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--USE OF PUNCH CARDS IN THERAPY -U-
AUTHOR--ETSHEYN, N.V. E
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 95-103
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--INTERNAL MEDICINE, PUNCHED CARD, PUBLIC HEALTH, HEART DISEASE,
DIGESTIVE DISEASE, PULMONARY DISEASE, INFORMATION STORAGE AND RETRIEVAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0832 STEP NO--UR/0504/70/042/003/0095/0103
CIRC ACCESSION NO--AP0102794
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102794

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPERIENCE IN USING PUNCH CARDS IN INTERNAL MEDICINE IN THE ESTONIAN SSR HAS BEEN SUMMARIZED. PRACTICAL EMPLOYMENT OF PUNCH CARDS IN PUBLIC HEALTH WAS DONE IN PARALLEL WITH THE DEVELOPMENT OF SPECIALIZED MEDICAL AID. PUNCH CARDS WERE USED IN CARDIORHEUMATOLOGY, GASTROENTEROLOGY, PULMONOLOGY. THEY WERE ESPECIALLY WIDELY USED IN ANALYSING AND RECORDING OF PROPHYLACTIC WORK, PARTICULARLY IN DISPANSERIZATION OF THE POPULATION, IN EPIDEMIOLOGICAL STUDIES IN THERAPY, COMPILATION OF BIBLIOGRAPHIES. AS COMPARED TO ROUTINE METHODS OF GROUPING AND ANALYSIS OF INFORMATION THE PUNCH CARD SYSTEMS ARE ADVANTAGEOUS AS REGARDS THE TIME CONSUMED TEN FOLD.

UNCLASSIFIED

USSR

UDC: 535.338.334:531.7

KARTASHEV, A. I., ETSIN, I. Sh., All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleev

"Possibilities of Using the Doppler Effect for Measuring Low Velocities and Amplitudes of Mechanical Oscillations"

Leningrad, Issledovaniya v Oblasti Opticheskikh i Svetovykh Izmereniy, Trudy Metrologicheskikh Institutov SSSR, No 114(174), 1970, pp 45-53

Abstract: The authors consider the possibilities of using a method of registration of the Doppler shift in the frequency of laser emission for measuring small velocities of a rectilinearly moving body and low amplitudes of mechanical oscillations. In the proposed method, one of the reflecting mirrors of a Michelson-Twyman-Green interferometer is securely fastened to the moving body. The rate of displacement of the body is determined by placing a photomultiplier cathode in the plane of the exit pupil of the interferometer and processing the resultant signal on a radio-frequency spectrum analyzer. The procedure can be used to measure linear displacements of 10^{-6} -500 m/s when the reflecting surface is located several hundred meters from the measuring instrument, as well as displace-

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USSR

UDC: 535.853.4

BUSLAYEVA, V. Ye., ETSIN, I. Sh., All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev

"A Multibeam Interferometer With Crystal Plate"

Leningrad, Issledovaniya v Oblasti Opticheskikh i Svetovykh Izmereniy, Trudy Metrologicheskikh Institutov SSSR, No 114(174), 1970, pp 66-71

Abstract: A theoretical study of the feasibility of using an interferometer made up of a crystal plate and two semitransparent mirrors for precise measurement of small displacements. An expression is found for the distribution of intensity in the interference pattern in the case where the interferometer is located between two polarization prisms. Bands of equal thickness are experimentally studied. An increase in the sharpness of the bands was observed as a result of interference between the ordinary and extraordinary beams. It is shown that the interferometer can be used in a precision installation for measuring small linear displacements. Three figures, bibliography of five titles.

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USSR

UDC 531.767:534.17

KARTASHEV, A. I., ETSIN, I. Sh.

"Potentialities of Using the Doppler Effect for the Measurement of Low Velocities and Amplitudes of Mechanical Oscillations"

Trudy Metrologicheskikh Institutov SSSR (Works of the Metrological Institutes of the USSR), No 1, 114 (174), 1970, pp 45-53 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 1, 1971, Abstract No 1.32.419)

Translation: The potentialities of use of the Doppler effect for the measurement of low velocities of a solid moving in a straight line and the amplitudes of mechanical oscillation are considered theoretically. It is shown that utilization of the Doppler effect makes it possible to measure the velocities of reflecting surfaces within the range of 10^{-6} - 500 m/sec, and that of nonreflecting surfaces within the range of 10^{-3} - 500 m/sec, when the surface is several hundred meters removed from the measuring instrument. Harmonic analysis of the beat signal, frequency-modulated due to the Doppler effect, permits measurement of the mechanical-oscillation amplitudes of non-reflecting surfaces within the range from several microns to a millimeter at distances of up to 10 - 30 meters. 3 figures. 8 bibliographic entries.

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USSR

UDC: 533.6.011.3

GOLOVINA, L. G., DEYCH, M. Ye., ZARYANKIN, A. Ye., ETT, V. V.,
Moscow

"Particulars of Gas Flow in Exit Cones at Near-Sonic Velocities"

Moscow, Izv. AN SSSR: Energetika i Transport, No 3, May/Jun
72, pp 123-128

Abstract: An investigation is made of the details of high subsonic and near-sonic compressible flow in a wind tunnel in the section where a cylindrical or converging profile meets a divergent channel (exit cone). It is found that an increase in the average value of the dimensionless velocity of gas flow in the initial section leads to an abrupt jump in longitudinal pressure gradients, as well as to an increase in nonuniformity of flow across the section. Under the effect of strong negative pressure gradients, degeneration of turbulence is observed in the section preceding the exit cone. This effect is a direct result of compressibility. The undesirable deformation of the velocity field preceding the exit cone combined with posi-

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USSR

GOLOVINA, L. G., Izv. AN SSSR: Energetika i Transport, No 3,
May/Jun 72, pp 123-128

tive pressure gradients in the divergent channel leads to flow detachment in the immediate vicinity of the neck of the tunnel, which is the cause of a critical drop in exit cone economy at high subsonic and near-sonic gas flow velocities. The degree of degeneration of turbulence is a function of the Reynolds number. Flow detachment can be delayed by increasing the Reynolds number as the relative velocity of gas flow in the input section increases.

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Acc. Nr:

AP0041517

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

4-70 4R0078

EVDOKIMOV D. Ya.

83487z Reaction of germanium dioxide with o-oxyquinoline studied by an adsorption-complexing method. Kogan, E. A.; Evdokimov, D. Ya. (Kafedra Obshch. Khim., Odessa. Elektrotekh. Inst. Svazi im. Popova, Odessa, USSR). Zh. Neorg. Khim. 1970, 15(1), 191-4 (Russ). Charcoal was treated with a AcOH soln. of o-oxyquinoline (I) (sic) and then adsorption of GeO_2 in aq. soln. on this charcoal was detd. Higher adsorption of GeO_2 on I-treated charcoal in comparison to that on untreated charcoal proves that GeO_2 is capable of a chem. reaction with I in aq. soln. HMJR

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REEL/FRAME

19751385

USSR

UDC 539.27

VILKOV, L. V., KHAYKIN, L. S., and EVDOKIMOV, V. V., Moscow State University
imeni M. V. Lomonosov

"Electronographic Study of Molecular Structure of $P[N(CH_3)_2]_3$ and
 $P[N(CH_2)_2]_3$ in the Vapor State"

Moscow, Zhurnal Strukturnoy Khimii, Vol 13, No 1, Jan-Feb 72, pp 7-14

Abstract: Geometric parameters of the tris-dimethylamidophosphite (I) and tris-ethyleneimidophosphite (II) molecules were determined by means of gas electronography at about 100° . Concurrent study of (I) and (II) made it possible to determine whether the correlation between the magnitude of the barrier to the inversion of a pyramidal configuration of the nitrogen bonds and the average value of its valence angle is carried over to the phosphorus derivatives. Principal internuclear distances and average quadratic amplitudes of the vibrations of atomic pairs were determined from the curves of radial distribution using the least square method. Optimal rotational angles of NC_2 groups about the P-N bonds were determined. The configuration of nitrogen atom bonds is nearly planar in (I) and practically pyramidal in (II). An increased $r(PN)$ was noted in (II) as compared to (I).
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E

Microbiology

USSR

UDC 615.281:546.621

EVENSHTEYN, Z. M.

"Distinguishing Characteristics of the Antibacterial Properties of Aluminum and Some Heavy Metals in the Air"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 2, 1970, p 135

Translation: A study was made of the antibacterial properties of aluminum, silver, and copper, unalloyed and containing slight amounts of impurities. The test microbe was E. coli No. 153, which remains viable after more than 2 hours at 59°C and after 30-35 min of exposure to phenol in a 1:70 dilution. A total of 610 bacteriological analyses were made.

In the first part of the experiment, plates of A 99.999 aluminum, Cp 999.9 silver, and MO copper were abraded with a steel blade immediately before they were infected with about 10,000 test microbes. In the second part of the test, the aluminum plates were placed in a 15 or 80% hydrochloric acid solution before infection with the same quantity of microbes. The effectiveness of de-oxidation of the test objects was checked metallographically by mechanical and chemical means. After a certain length of exposure, all the infected plates were washed in a measured amount of physiological solution, which was then passed through No. 3 membrane filters.

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USSR

EVENSHTeyN, Z. M., Zhurnal Mikrobiologii, No 2, 1970, p 135

The difference in the effects on *E. coli* of the abraded silver and copper, on one hand, and the aluminum covered with a well-formed oxide-hydroxide film, on the other, and chemically inactive glass were statistically insignificant. Fifteen minutes after the start of the experiment, 99% of the original number of bacteria grew on Endo's medium and on meat-peptone agar, 96% after 30 min, 91% after 60 min, 74% after 3 hours, 52% after 6 hours, and approximately 35% after 12 hours.

On plates of the same unalloyed aluminum infected immediately after abrasion, with all other conditions equal, 76% of the original number of bacilli applied to the plates were grown on the same nutrient media, 65% after 30 min, 54% after 60 min, and approximately 6% after 3 hours.

In general, the microbes died somewhat more quickly on the silver and copper covered with deposits of metallic chloride or oxide than on freshly de-oxidized aluminum. Silver that contained 0.4% alloys and brass was more active than the virtually unalloyed silver and copper. On the other hand, the antibacterial properties of the superpure A 99.999 aluminum were higher than the A 99.50 aluminum containing approximately 0.35% iron, 0.14% silicon, and 0.01% copper treated in the same way.

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USSR

EVENSHTeyN, Z. M., Zhurnal Mikrobiologii, No 2, 1970, p 135

It is reasonable to conclude from these experiments that aluminum, which possesses specific physicochemical properties different from those of the heavy metals used, acquires the capacity to affect non-sporogenic bacteria adversely only after its surface is freed from the oxide-hydroxide film and coating of inorganic compounds, hydrochloric acid in particular.

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USSR

UDC 547.26'118

PUDOVIK, A. N., ZIMIN, M. G., SOBANOV, A. A., and EVSTAF'YEV, G. I., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Reactions of α -Hydroxyallylphosphonic Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 1910-1915

Abstract: It was shown that the dimethyl ester of α -hydroxyallylphosphonic acid upon heating with catalytic amounts of alkoxides or trimethylamine are converted to the propionate of the dimethyl ester of α -hydroxyallylphosphonic acid. A route of the formation of the propionate was proposed including the initial isomerization of the α -hydroxyallylphosphonic ester into the ester of propionephosphonic acid followed by its reaction with a second molecule of α -hydroxyallylphosphonic ester. It was shown that the reaction of α -ketophosphonic acid esters with α -hydroxyalkylphosphonates takes place with the formation of dialkyl phosphites, esters of carboxylic acids, and dialkyl esters of α -dialkylphosphonalkylphosphonic acid. Heating the dialkylesters of α -hydroxyallylphosphonic acid in acetic acid or anhydride in presence of sulfuric acid leads to their acetylation.

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Alkaloids

USSR

UDC 542.953/.954

CHUMACHENKO, A. V., ZVONKOVA, YE. N., and EVSTIGNEYEVA, R. P., Moscow Institute of Fine Chemistry imeni M. V. Lomonosov

"Synthesis of the Alkaloid Pilocarpine. The condensation of 1-Ethyl-2-carbalkoxymethyl-2-butenolide with Phthaloylglycye Chloride"

Leningrad, Zhurnal Organicheskoy Khimic, Vol 8, Vyp 5, May 72, pp 1100-1103

Abstract: The synthesis of dehydroaminomethyl pilopyl ketine hydrochloride was undertaken, since this is a possible key compound in the synthesis of the alkaloid pilocarpine. The sodium derivative of 1-ethyl-2-carboethoxymethyl or 1-ethyl-2-carbobutoxymethyl-2-butenolide was formed by reacting sodium suspended in ether or benzene with ethanol with the appropriate butenolide. This derivative is then reacted with phthaloylglycye chloride to form the condensation product: 1-ethyl-2-(phthalimidoacetocarbethoxy) or 1-ethyl-2-(phthalimidoacetocarbobutoxy)methyl-2-butenolide. The product was crystallized and its structure confirmed by UV and IR spectroscopy. Subsequently the condensation product was subjected to hydrolysis with simultaneous decarboxylation by HCl to give the desired pilopyl ketone hydrochloride. However, further acid hydrolysis also occurs, producing glycine hydrochloride, so that the desired salt is impure. The authors were unable to separate the two salts by chromatographic or physicochemical means.

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Biochemistry

USSR

UDC 576.314

EVTODIYENKO, YU. V., PESHKOVA, L. V., and SHCHIPAKIN, V. N., Institute of Biophysics, USSR Academy of Sciences, Pushchino-na-Oke

"Possible Mechanism of Calcium, Hydrogen, and Phosphate Ion Transport Through a Mitochondrial Membrane"

Ukrainskiy Biokhimicheskiy Zhurnal, Vol 43, No 1, 1971, pp 98-104

Abstract: Transport of Ca^{2+} , H^+ , and phosphate (H_3PO_4 , H_2PO_4^- , HPO_4^{2-} , and PO_4^{3-}) can occur across a mitochondrial membrane against the electrochemical potential with direct participation of mitochondrial ATP-ase. Literature and experimental data are presented to prove this point. Transport against the electrochemical potential at a mitochondrial membrane requires the involvement of at least two forms of ions with different properties. The transition from one form to the other must be coupled with an exothermic reaction, such as ATP hydrolysis. The carrier for mitochondrial H^+ may be ATP-ase of the membrane. Ca^{2+} is similarly transported across a mitochondrial membrane. This calcium transfer is accompanied by phosphate transfer. A mechanism is proposed for the participation of ATP-ase in the transfer of the above types of ions, and this mechanism is explained in terms of literature data.

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Biochemistry

USSR

UDC 576.314

EVTODIYENKO, YU. V., PESHKOVA, L. V., and SHCHIPAKIN, V. N., Institute of Biophysics, USSR Academy of Sciences, Pushchino-na-Oke

"Possible Mechanism of Calcium, Hydrogen, and Phosphate Ion Transport Through a Mitochondrial Membrane"

Ukrainskiy Biokhimicheskiy Zhurnal, Vol 43, No 1, 1971, pp 98-104

Abstract: Transport of Ca^{2+} , H^+ , and phosphate (H_3PO_4 , H_2PO_4^- , HPO_4^{2-} , and PO_4^{3-}) can occur across a mitochondrial membrane against the electrochemical potential with direct participation of mitochondrial ATP-ase. Literature and experimental data are presented to prove this point. Transport against the electrochemical potential at a mitochondrial membrane requires the involvement of at least two forms of ions with different properties. The transition from one form to the other must be coupled with an exothermic reaction, such as ATP hydrolysis. The carrier for mitochondrial H^+ may be ATP-ase of the membrane. Ca^{2+} is similarly transported across a mitochondrial membrane. This calcium transfer is accompanied by phosphate transfer. A mechanism is proposed for the participation of ATP-ase in the transfer of the above types of ions, and this mechanism is explained in terms of literature data.

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Radiobiology

USSR

UDC .577.1:612.015.33:612.8.015

KOLODUB, F. A. and EVTUSHENKO, G. I., Kharkov Institute of Industrial Hygiene and Occupational Diseases

"Nitrogen Metabolism in the Brains of Rats Exposed to a Pulsed Low-Frequency Electromagnetic Field"

Kiev, Ukrainskiy Biokhimicheskiy Zhurnal, No 3, 1972, p 311

Abstract: Some aspects of nitrogen metabolism (formation and removal of ammonia) were investigated in the brains of rats exposed to a pulsed low-frequency (7 kHz) electromagnetic field of different intensities (24 and 72 kA/m) and durations. Repeated (15 sessions) and chronic (6 months) exposures were found to impair nitrogen metabolism in nervous tissue. After exposure to an intensity of 72 kA/m, the amount of ammonia and glutamic acid decreased, the amide nitrogen content of the proteins remained unchanged while the deamination of adenylic acid and synthesis of glutamine were inhibited owing to an insufficiency of ATP. After chronic exposure (24 kA/m), the changes in amount of ammonia were phasic; they occurred in the absence or slight increase in the level of glutamine disproportionate to the increase in amount of ammonia.

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1/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CRITICAL OUTPUT OF SYNCHRONIC HIGH SPEED TURBOGENERATORS OF HIGHER
FREQUENCY -U-
AUTHOR-(03)-RABINOVICH, I.N., SHUBOV, I.G., EYBSHITS, A.G.
COUNTRY OF INFO--USSR ~~OK~~
SOURCE--MOSCOW, ELEKTRICHESTVO, NO 2, 1970, PP 69-72
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., ENERGY CONVERSION
(NON-PROPULSIVE)
TOPIC TAGS--HIGH FREQUENCY, SYNCHRONOUS GENERATOR, CIRCUIT PARAMETER,
THERMAL EFFECT, VIBRATION STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAHE--1999/1225

STEP NO--UR/0105/70/000/002/0069/0072

CIRC ACCESSION NO--AP0123189

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123189

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LIMITATIONS ARE STUDIED WHICH ARE ASSOCIATED WITH THE DESIGN OF HIGH SPEED (N IS GREATER THAN 3,000 RPM) SYNCHRONIC GENERATORS OF HIGH FREQUENCY (FOR EXAMPLE 400 CPS). THESE LIMITATIONS CONSIST OF THE FOLLOWING: ELECTROMAGNETIC LOADS WHICH DETERMINE THE INDUCTIVE RESISTANCE AND OVERHEATING OF COILS DURING A GIVEN METHOD OF COOLING, LINEAR VELOCITY AT THE ROTOR PERIPHERY WHICH IS RELATED TO BANDAGE STRENGTH, AND THE ACTIVE LENGTH OF THE ROTOR WHICH DETERMINES MACHINE VIBRATION. VALUES ARE GIVEN FOR THE CRITICAL OUTPUT OF THE TURBOGENERATOR FOR A GIVEN RATE OF ROTATION AND THE STATED LIMITATIONS TAKEN INTO CONSIDERATION. ORIGINAL ARTICLE: FOUR TABLES.

UNCLASSIFIED

USSR

UDC 621.357.7:669.38

DYMARSKAYA, P. I., GERENROT, YU. YE., EYCHIS, A. P., Ukrainian Scientific-
Research Institute of Local Industry ~~SECRET~~

"Study of Corrosion Resistance of Nickel and Copper-Nickel Coatings"

Moscow, Zashchita Metallov, No 4, 1972, pp 492-496.

Abstract: The authors studied the corrosion resistance of coating systems containing copper and nickel in order to estimate the effectiveness of a copper sublayer and possibility of using shiny nickel as the copper layer. The coatings were tested over steel under natural conditions for one year. It is concluded that a copper sublayer produced from ethylene diamine and tartrate electrolytes improves the protective properties of nickel coatings. At a thickness of 18 μ , the copper-nickel coatings are equal in corrosion resistance to binickel coatings. In spite of the greater electrochemical activity of shiny nickel coatings, they protect steel from corrosion better than matte polished coatings. Shiny nickel coatings cannot be used for outer surfaces of products used under atmospheric conditions, however. A thin layer of chromium does not improve the protection of steel from corrosion, but improves the durability of the decorative appearance of the coating.

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1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PIGMENTARY AND EXCRETORY FUNCTION OF THE LIVER IN CHRONIC LEUKEMIA
-U-
AUTHOR--(04)--DOZORETS, YU.L., GURIN, N.G., KOZLOV, L.M., EYDEL, I.I.
CCOUNTRY OF INFO--USSR
SOURCE--TERAPEVTITCHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 32-35
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD SERUM, LEUKEMIA, LIVER FUNCTION, EXCRETION, BILIRUBIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1922

STEP NO--UR/0504/70/042/006/0032/0035

CIRC ACCESSION NO--AP0129271

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NG--AP0129271

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS DETERMINED BILIRUBIN IN THE BLOOD SERUM AFTER HIMANS VAN DEN BERG IN 219 PATIENTS WITH CHRONIC LEUKEMIA AND ITS FRACTION, AFTER EBERLEIN IN 91 PATIENTS. QUANTITATIVE STUDY OF URINE UROBILIN WAS MADE IN 109 PERSONS AND CAPACITY OF THE LIVER TO EXCRETE ASORUBIN STAIN IN 107 PATIENTS. INCREASE OF FREE AND MONOGLUCURONID BILIRUBIN AND CHANGES OF DIGLUCURONIDBILIRUBIN IN THE BLOOD SERUM WERE FOUND. THESE CHANGES WERE MAINLY ASSOCIATED WITH A DISORDER OF THE CONJUGATING FUNCTION OF THE LIVER DUE TO A REDUCTION OF GLUCURONIL, TRANSFERASE ACTIVITY OF MICROSOMES OF HEPATOCYTES. IN THE TERMINAL PERIOD THE BILIRUBIN EXCRETORY FUNCTION OF THE LIVER WAS DISTURBED MOST OF ALL. UROBILINSORBTIVE FUNCTION OF THE LIVER WAS CONSTANTLY DISTURBED AND EXCRETORY, REMAINED UNCHANGED. FACILITY: KAFEDRA GOSPITAL'NOY TERAPII VITEBSKOGO MEDITSINSKOGO INSTITUT.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PHOTOLUMINESCENCE OF ANODIC OXIDE FILMS ON ALUMINUM -U-
AUTHOR-(02)-EYDELBERG, M.I., TSEYTINA, T.Z.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 133-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--PHOTOLUMINESCENCE, LUMINESCENCE, ANODIZED ALUMINUM ALLOY,
ANODIC OXIDATION, OXIDE FILM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1397 STEP NO--UR/0139/70/013/002/0133/0135
CIRC ACCESSION NO--AT0120190
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0120190

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF INVESTIGATION OF THE RELATION OF PHOTOLUMINESCENCE OF ANODIC OXIDE FILMS ON AL TO THE REGIME OF FORMING AND ANNEALING TEMP. ARE REPORTED. IT WAS OBSD. THAT A WEAL SHIFT TOWARD LONGWAVES OCCURS WITH INCREASING FORMATION TIME. THE POSITION OF THE STRONGEST PART OF THE SPECTRUM AND THE BRIGHTNESS OF LUMINESCENCE OF ANODIC OXIDE FILMS FORMED IN OXALIC ACID DEPDED ON THICKNESS AND POROSITY OF FILMS. THE ANNEALING OF OXIDE FILMS OBTAINED BY FORMING IN D.C. STIMULATES THE CONCN. OF LUMINESCENT CENTERS OF THE SAME NATURE WITHOUT AFFECTING THEIR POROSITY. FACILITY: KRYM. GOSPEDINST. IM. FRUNZE, SIMFEROPOL, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--WAVES OF THE ELECTROLUMINESCENCE INTENSITY OF ANODIC OXIDE FILMS
-U-
AUTHOR--EYDELBERG, M.I. E
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 239-42
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--ELECTROLUMINESCENCE, OXIDE FILM, ANODIZATION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/0912 STEP NO--UR/0368/70/012/002/0239/0242
CIRC ACCESSION NO--AP0116422
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 017

CIRC ACCESSION NO--AP0116422

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE POLARIZATION EFFECTS IN THE ELECTROLUMINESCENCE DESCRIBED EARLIER IN ORG. SOLVENTS (CA 65: 6535H) WERE STUDIED IN AQ. SOLNS. THE PEAKS OF THE WAVES OF BRIGHTNESS OF THE ANODIC OXIDE FILM ON AL IN CONTACT WITH SOLNS. OF 0.1PERCENT BORIC ACID OR (NH SUB4) SUB2 CO SUB3 SHOWED A POLARIZING CHARACTER. THE RATIOS OF THE INTENSITIES OF THE ANODIC AND CATHODIC PEAKS DEPENDED ON THE VOLTAGE DROP ON THE OXIDE FILM IN THE CORRESPONDING HALF PERIOD. THE PHASES OF THE CATHODIC PEAKS WERE DETD. BY THE POLARIZATION LEVEL OF THE OXIDE FILM, ORIGINATING IN THE ANODIC HALF PERIOD, AND BY THE MAGNITUDE OF THE VOLTAGE IN THE CATHODIC HALF PERIOD. THE DECREASE OF THE AMPLITUDE OF THE CATHODIC FLASH AND THE INCREASE OF ITS PHASE AT A SUFFICIENT INCREASE OF THE FREQUENCY OF THE APPLIED VOLTAGE WERE EXPLAINED ALSO BY THE POLARIZATION EFFECTS.

UNCLASSIFIED

EYDEL'MAN, L. Ya.

Telephone Equipment

SOI JPRS 58112
31 JAN 73

NEW AUTOMATIC LONG-DISTANCE TELEPHONE EXCHANGE DESCRIBED
Article by Graduate of Technical Science, L. Ya. EYDEL'MAN, "The ARTS-3
Automatic Long-Distance Telephone Exchange" ~~in~~ Radio i Svyaz, Russian,
No 3, August, 1970, pp 20-23

In the current five-year plan it is planned to place into
operation a number of medium capacity automatic long-
distance telephone exchanges of the ARTS-3 type in a
number of large cities in the country. The ARTS-3
exchange was worked out by the Central Scientific Research
Institute of Communications of the Ministry of Communi-
cations jointly with enterprises of the USSR Ministry of
Radio Industry for the construction of automatic telephone
exchanges for trunk and intrazone communications. The
set of equipment for the automatic long-distance tele-
phone exchange makes it possible to achieve widespread
automation of both the processes involved in making con-
nections and a number of processes inherent in technical
operation, accounting and settling accounts with customers
for the use of long-distance and intrazone telephone com-
munications.

Principle of Automation

The ARTS-3 exchange may be installed both in a separate building or
together with interurban telephone exchange of the cord type. In the latter
case the ARTS-3 ensures an expansion in the capacity of the interurban tele-
phone exchange of the cord type with apparatus for semi-automatic commu-
nication on decade-step-by-step selectors due to the joint operation of the
equipment of both exchanges at the point of entry into interurban channels
included both in decade-step-by-step selectors of the interurban telephone
exchange of the cord type and in coordinate selection steps of the ARTS-3.

The set of ARTS-3 equipment ensures:

— Hoping of up to 100 generations of interbreeding and still not a common occurrence.

as found reported in this study is consistent with the results of the previous studies on the effect of the frequency of the training on the improvement of the performance of the subjects in the same task.

— Joint operation via intercom sharing with intention to use telephone extensions of the sort type controlled in other articles, domestic and commercial ones appearing, is described in various extensions of the domestic type (A01B-2), A01B-3, A01B-4 and A01B-5 type, as well as about the type A01B-6, A01B-7, A01B-8 and A01B-9 type, as well as about the type A01B-10, A01B-11, A01B-12, A01B-13, A01B-14, A01B-15, A01B-16, A01B-17, A01B-18, A01B-19, A01B-20, A01B-21, A01B-22, A01B-23, A01B-24, A01B-25, A01B-26, A01B-27, A01B-28, A01B-29, A01B-30, A01B-31, A01B-32, A01B-33, A01B-34, A01B-35, A01B-36, A01B-37, A01B-38, A01B-39, A01B-40, A01B-41, A01B-42, A01B-43, A01B-44, A01B-45, A01B-46, A01B-47, A01B-48, A01B-49, A01B-50, A01B-51, A01B-52, A01B-53, A01B-54, A01B-55, A01B-56, A01B-57, A01B-58, A01B-59, A01B-60, A01B-61, A01B-62, A01B-63, A01B-64, A01B-65, A01B-66, A01B-67, A01B-68, A01B-69, A01B-70, A01B-71, A01B-72, A01B-73, A01B-74, A01B-75, A01B-76, A01B-77, A01B-78, A01B-79, A01B-80, A01B-81, A01B-82, A01B-83, A01B-84, A01B-85, A01B-86, A01B-87, A01B-88, A01B-89, A01B-90, A01B-91, A01B-92, A01B-93, A01B-94, A01B-95, A01B-96, A01B-97, A01B-98, A01B-99, A01B-100, A01B-101, A01B-102, A01B-103, A01B-104, A01B-105, A01B-106, A01B-107, A01B-108, A01B-109, A01B-110, A01B-111, A01B-112, A01B-113, A01B-114, A01B-115, A01B-116, A01B-117, A01B-118, A01B-119, A01B-120, A01B-121, A01B-122, A01B-123, A01B-124, A01B-125, A01B-126, A01B-127, A01B-128, A01B-129, A01B-130, A01B-131, A01B-132, A01B-133, A01B-134, A01B-135, A01B-136, A01B-137, A01B-138, A01B-139, A01B-140, A01B-141, A01B-142, A01B-143, A01B-144, A01B-145, A01B-146, A01B-147, A01B-148, A01B-149, A01B-150, A01B-151, A01B-152, A01B-153, A01B-154, A01B-155, A01B-156, A01B-157, A01B-158, A01B-159, A01B-160, A01B-161, A01B-162, A01B-163, A01B-164, A01B-165, A01B-166, A01B-167, A01B-168, A01B-169, A01B-170, A01B-171, A01B-172, A01B-173, A01B-174, A01B-175, A01B-176, A01B-177, A01B-178, A01B-179, A01B-180, A01B-181, A01B-182, A01B-183, A01B-184, A01B-185, A01B-186, A01B-187, A01B-188, A01B-189, A01B-190, A01B-191, A01B-192, A01B-193, A01B-194, A01B-195, A01B-196, A01B-197, A01B-198, A01B-199, A01B-200, A01B-201, A01B-202, A01B-203, A01B-204, A01B-205, A01B-206, A01B-207, A01B-208, A01B-209, A01B-210, A01B-211, A01B-212, A01B-213, A01B-214, A01B-215, A01B-216, A01B-217, A01B-218, A01B-219, A01B-220, A01B-221, A01B-222, A01B-223, A01B-224, A01B-225, A01B-226, A01B-227, A01B-228, A01B-229, A01B-230, A01B-231, A01B-232, A01B-233, A01B-234, A01B-235, A01B-236, A01B-237, A01B-238, A01B-239, A01B-240, A01B-241, A01B-242, A01B-243, A01B-244, A01B-245, A01B-246, A01B-247, A01B-248, A01B-249, A01B-250, A01B-251, A01B-252, A01B-253, A01B-254, A01B-255, A01B-256, A01B-257, A01B-258, A01B-259, A01B-260, A01B-261, A01B-262, A01B-263, A01B-264, A01B-265, A01B-266, A01B-267, A01B-268, A01B-269, A01B-270, A01B-271, A01B-272, A01B-273, A01B-274, A01B-275, A01B-276, A01B-277, A01B-278, A01B-279, A01B-280, A01B-281, A01B-282, A01B-283, A01B-284, A01B-285, A01B-286, A01B-287, A01B-288, A01B-289, A01B-290, A01B-291, A01B-292, A01B-293, A01B-294, A01B-295, A01B-296, A01B-297, A01B-298, A01B-299, A01B-300, A01B-301, A01B-302, A01B-303, A01B-304, A01B-305, A01B-306, A01B-307, A01B-308, A01B-309, A01B-310, A01B-311, A01B-312, A01B-313, A01B-314, A01B-315, A01B-316, A01B-317, A01B-318, A01B-319, A01B-320, A01B-321, A01B-322, A01B-323, A01B-324, A01B-325, A01B-326, A01B-327, A01B-328, A01B-329, A01B-330, A01B-331, A01B-332, A01B-333, A01B-334, A01B-335, A01B-336, A01B-337, A01B-338, A01B-339, A01B-340, A01B-341, A01B-342, A01B-343, A01B-344, A01B-345, A01B-346, A01B-347, A01B-348, A01B-349, A01B-350, A01B-351, A01B-352, A01B-353, A01B-354, A01B-355, A01B-356, A01B-357, A01B-358, A01B-359, A01B-360, A01B-361, A01B-362, A01B-363, A01B-364, A01B-365, A01B-366, A01B-367, A01B-368, A01B-369, A01B-370, A01B-371, A01B-372, A01B-373, A01B-374, A01B-375, A01B-376, A01B-377, A01B-378, A01B-379, A01B-380, A01B-381, A01B-382, A01B-383, A01B-384, A01B-385, A01B-386, A01B-387, A01B-388, A01B-389, A01B-390, A01B-391, A01B-392, A01B-393, A01B-394, A01B-395, A01B-396, A01B-397, A01B-398, A01B-399, A01B-400, A01B-401, A01B-402, A01B-403, A01B-404, A01B-405, A01B-406, A01B-407, A01B-408, A01B-409, A01B-410, A01B-411, A01B-412, A01B-413, A01B-414, A01B-415, A01B-416, A01B-417, A01B-418, A01B-419, A01B-420, A01B-421, A01B-422, A01B-423, A01B-424, A01B-425, A01B-426, A01B-427, A01B-428, A01B-429, A01B-430, A01B-431, A01B-432, A01B-433, A01B-434, A01B-435, A01B-436, A01B-437, A01B-438, A01B-439, A01B-440, A01B-441, A01B-442, A01B-443, A01B-444, A01B-445, A01B-446, A01B-447, A01B-448, A01B-449, A01B-450, A01B-451, A01B-452, A01B-453, A01B-454, A01B-455, A01B-456, A01B-457, A01B-458, A01B-459, A01B-460, A01B-461, A01B-462

-- Operation with city second-stop-off machine and connection to automatic telephone exchange via reserved lines with direct and automatic connections from automatic telephone exchanges and via connecting lines with incoming communications from the automatic long-distance telephone exchange to the automatic telephone exchange;

-- Organization of incoming radioteletype and automatic communications for automatic routing between channels hooked up to the exchange and intrazonal communications lines;

--Automatic communications from subscribers in the zone are effected through the automatic long-distance telephone exchange. In accordance with the plan, the automatic long-distance exchanges of other states do not have subscribers in Moscow connected to their outlets via the channels of the automatic inter-subject network;

Automatic accounting of the form and quality of service of passengers:

--- Automatic accounting of the cost of interurban connections and outgoing automatic trunk line, interurban, and interzone communications.

-- Automatic control and checking of malfunctions of basic communication equipment, channels, the voice circuits, and lines.

Measuring equipment is based on multiple crosshair connections and relays of the RPN (standard grid type) (in linear components) and relays (in group instruments), as well as semiconductor and magnetic elements.

*Economic
Science*

EX POST INTERBRANCH BALANCE FOR 1966 REEVALUATED IN NEW PRICES

Article by Professor M. Yudelman, Director of Economic Science, Chief, Administration for the balance of the National Economy, USSR Central Statistical Administration, Moscow, Voprosy Statistiki, Russian, No. 2, 1972, pp. 2-14.

The objectives of the 24th Congress of the CPSU on the Five-Year Plan for the Development of the USSR National Economy in 1971-1975 indicate the need to improve the scientific substantiation of national economic plans by making them more balanced and by the more extensive elaboration of post-revenue problems, of problems relating to progress in science and technology and of large part belongs to ex post interbranch balances and to the extensive use of economic-statistical methods and computers in the elaboration and analysis of the data.

The ex post interbranch balance of production and product distribution compiled for 1966 has been extensively used for analyzing social production and investments in planning. The data of the balance have made it possible to make extensive and comprehensive analysis of the physical composition and the value structure of social production, to study interbranch production and relations in the national economy in detail, to study production costs and profitability, and to make a number of other economic calculations.

The ex post interbranch balance for 1966 was compiled in prices that were actually in effect in 1966.

If more extensive use were to be made of the data of the interbranch balance for the compilation of long-range plans and especially the Ninth Five-Year Plan it must be pointed out that the data of this balance had to be reevaluated in the new prices that took effect on 1 July 1967, with due regard to seasonal changes in those prices (up to 1970), i.e., in the prices that were in effect at the time that the new five-year plan was compiled.

YAS 55635 # 358 April 5, 72

EYDELMAN, M.

USSR

UDC 517.946.9

EYDEL'MAN, S. D., and SIRChENKO, Z. F.

"On the Application of the Principle of Averaging for the Solution of Some Parabolic Boundary Value Problems"

Kiev, Ukrainskiy Matematicheskii Zhurnal, Vol 25, No 5, 1973, pp 621-631

Abstract: N. N. Bogolyubov's principle of averaging has been applied by many authors, both to ordinary differential equations and to partial differential equations. Several authors, including Eydel'man, have applied it to parabolic equations. In this article, Bogolyubov averaging is applied to the solution of the Dirichlet problem and to a problem with a directional derivative for quasi-linear parabolic equations of the second order. In the process, the averaging theorem is obtained as a result of a theorem that the solution of parabolic boundary value problems is a continuous function of the parameter. The latter theorem is quite complex; it is proven, subject to seven conditions, and the proof occupies most of the article.

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USSR

UDC 517.919

SELEZNEVA, F. G., and ^{ck} EYDEL'MAN, S. D., Voronezh Polytechnic Institute, Kiev Advanced Radio-Engineering School

"Initial Value Problem for Systems With Constant Coefficients"

Minsk, Differentsial'nyye Uravneniya, Vol 6, No 11, Nov 70, pp 2062-2073

Abstract: V. A. SOLONNIKOV was the first to show that for general systems of partial differential equations unsolved relative to higher derivatives with respect to the time coordinate t , the Cauchy problem, generally speaking, is poorly formulated and it is natural to replace it with an initial value problem whose operator is connected with the initial system of differential equations by YA. B. LOPATINSKIY's algebraic condition. The present article establishes theorems on the correct solvability of the initial value problem for arbitrary systems with constant coefficients in the spaces H as well as the solvability in

spaces increasing with an increase of the spacial coordinates of the function $1/2$

USSR

SELEZNEVA, F. G., and EYDEL'MAN, S. D., *Differentsial'nyye Uravneniya*, Vol 6, No 11, Nov 70, pp 2062-2073

tions. The article essentially uses methods developed in the study of the Cauchy problem, constructions of V. A. SOLONNIKOV, and the Seidenberg-Tarski exclusion theory.

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- 6 -

USSR

UDC: 517.944.3

KONDRAT'YEV, V. A., EYDEL'MAN, S. D., and PLETNEVA, T. G.

"Positive Solutions of Partial Differential Equations in the Neighborhood of a Smooth, Noncharacteristic Hypersurface"

Moscow, Doklady Akademii Nauk SSSR, vol 204, No 2, 1972, pp 279-282

Abstract: This paper considers weak positive solutions of an arbitrary equation of the form

$$Pu \equiv \sum_{|k| \leq m} (-1)^k D_x^k (a_k(x) u(x)) = f(x)$$

and, as a primary result, establishes the fact of their summability for the summability of $f(x)$ in any subregion G of region Ω contiguous with the smooth, noncharacteristic surface $\phi(x) = 0$. For homogeneous elliptical equations, in particular, the summability of weak positive solutions is derived from an arbitrary boundary of a region with smooth limits.

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USSR

UDC 512.25/.26+519.3:330.115

EYDEL'NANT, M. I., SYCHEVA, N. I.

"One Generalization of a Numeration Algorithm with Crossing Out"

Nauch. Zap. Tashkent. In-t Nar. Kh-va [Scientific Writings of Tashkent Economics Institute], No 34, 1970, pp 39-50, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V677, unsigned).

Translation: The method of numeration with crossing out is extended to the generalized transport problem.

1/1

USSR

UDC 615.37:[576.858.095.383:611-018.35

SHCHERBAKOVA, E. G., EYDEL'SHTEYN, S. I., and FURER, N. M., Laboratory for New Antibiotics and Other Natural Compounds, Department of Microbiology, Central Institute for the Advanced Training of Physicians, Moscow

"Pharmacological Studies on Human Leukocyte Interferon"

Moscow, Antibiotiki, Vol 18, No 3, 1973, pp 256-259

Abstract: Studies were conducted on cats, rabbits, mice, and dogs to determine possible toxic effects of human leukocyte interferon (HLI). Acute toxicity studies were conducted on 18-20 g mice and 1.5-2.0 kg rabbits, employing HLI with activities of 1200-1500 units/ml; intravenous (iv) injections of 1 ml to mice and 1-5 ml/kg to rabbits were well tolerated and did not result in any abnormal changes. When HLI was administered to dogs, 5-10 ml/kg, iv, there were no changes in respiration, pulse rate, or in the EKG. The iv administration of HLI, 1 ml/kg, to rabbits did not elicit any pyrogenic effects. When HLI was administered iv to cats under urethan anesthesia there were no significant changes in the arterial blood pressure; the insignificant hypotension that was observed was less than that elicited by 0.1 μ g/kg of histamine. Intracutaneous administration of 0.1 ml to rabbits did not evoke necrosis or infiltration. Subconjunctival administration of HLI (0.1-0.5 ml) in rabbits resulted in limited hyperemia and insignificant edema, all signs of which disappeared by 1/2

USSR

SHCHERBAKOVA, E. G., et al., Antibiotiki, Vol 18, No 3, 1973, pp 256-259

24 h. HLI was found to increase the ciliary activity of kitten trachea, which may be regarded as a favorable sign that would lead to more rapid elimination of respiratory viruses. Chronic studies on 18-20 g mice receiving 0.25 ml of HLI daily subcutaneously for 3 weeks did not elicit any local changes or differences in weight or behavior in comparison with control animals. Similarly, no negative effects were noted in rabbits on iv administration of HLI at a dose of 1 ml/kg daily for 2 weeks; blood studies were normal. Autopsies of mice and rabbits did not show any pathologic changes in any of the organs. Daily instillation of 0.1 ml of HLI into the conjunctival sac of rabbits did not evoke any changes in the epithelium or the cornea. The administration of 0.5 ml into each nasal passage of 15-20 g mice (t.i.d for 5 days) was without adverse effects on the mucous membrane or the respiratory system. Thus, on the basis of histological and pharmacological studies, HLI has been shown to be completely nontoxic and without adverse effects on the growth and development of young animals.

2/2

- 33 -

USSR

UDC 615.331(Prodigosanum).015.46

YERMOL'YEVA, Z. V., VAYSBERG, G. YE., TARAKENKO, L. A., EYDEL'SHTEYN, S. I.,
Laboratory of Medical Cytology, Chair of Microbiology, and PROKHOROVA, I. I.
Central Institute of Advanced Training of Physicians and Aerosol Laboratory,
All-Union Scientific Research Institute of Antibodies

"Effect of Experimental Inhalation of Prodigosan Aerosols on Some Indices of
Immunobiological Reactivity"

Moscow, Antibiotiki, No 12, 1971, pp 1076-1081

Abstract: Inhalation of the bacterial polysaccharide prodigosan (a stimulant of the reticuloendothelial system) resulted in satisfactory absorption of the substance and a pronounced systemic reaction in rabbits. A single inhalation (1 μ g/ml) caused the number of leukocytes in 1 mm of peripheral blood to double within 24 hours and remain at that level for 6 to 8 days. Single inhalation also greatly increased the number of neutrophils and stab cells for several days. Twenty-four hours after inhalation, serum opsonin-phagocytic activity increased almost 3-fold and did not return to the original level until day 10. Intramuscular injection of prodigosan produced similar blood shifts. Inhalation of prodigosan (50 to 200 μ g/ml) had no effect on the ciliated epithelium of isolated kitten and puppy tracheas. These results warrant clinical trials of prodigosan as a prophylactic agent.

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- 13 -

Acc. Nr: **AP0051951**

Ref. Code: **UR0297**

PRIMARY SOURCE: Antibiotik

15, Nr 4, pp 357-359

EXPERIENCE WITH LOCAL USE OF GLYCOCYCLINE IN CERTAIN LOR DISEASES

N. V. Gaspodina, A. I. Kuzmina, V. S. Moskichev, N. N. Popova, S. I. Eydelshteyn

F. E. Dzerzhinsky's Polyclinic, Moscow

Acquous solutions of glycocycline at a concentration of 500 to 20,000 Units/ml and powders were used locally as ear drops, solutions for washing the sinus cavities and aerosol inhalations in the treatment of 144 lor cases with microflora sensitive to tetracycline. 110 patients suffering from exacerbated chronic pharyngo-laryngitis, sinusitis, chronic otitis and tonsillitis showed satisfactory results. The antibiotic applications were satisfactory tolerated by the patients. No severe side effects were observed.

REEL/FRA
19820438

Acc. Nr.: AP0046491

EYDINOV

V. Ya.

Ref. Code: URD115

USSR

UDC 531.741.089.6

EYDINOV, V. YA.

"Accuracy of the Measurement of Angles on Goniometers"

Moscow, Izmeritel'naya Tekhnika (Measurement Technology), No 1, 1970, pp 24-29

Translation: Based on the analysis of effective errors of goniometers, methods and specific recommendations were presented for increasing the accuracy of results of measurements on these instruments just by methodical operations. (6 figures, 6 biblio. ref.)

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21 87

Reel/Frame
19781744

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--OPHTHALMONEUROLOGICAL METHODS OF EXAMINING STRABISMIC CHILDREN -U-
AUTHOR--(02)--SMOLIYANINOVA, I.L., EYDINOVA, M.B.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK OPTAL'MOLOGII, 1970, NR 3, PP 9-12
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--OPHTHALMOLOGY, NEUROLOGY, PEDIATRICS, MEDICAL EXAMINATION,
VISUAL DEFECT

CCNTRGL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3003/0123

STEP NO--UR/0357/70/000/003/0009/0012

CIRC ACCESSION NO--AP0129379

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129379

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GREAT MAJORITY OF CHILDREN WITH CONVERGENT STRABISMUS UNDER EXAMINATION DEMONSTRATE THE SYMPTOM OF IMPLICATED BASE OF THE PONS VAROLII. THIS SYMPTOM FINDS ITS EXPRESSION IN THE LAXITY OF THE EFFERENT NERVE ON THE SIDE OF THE SQUINT, COMING IN CONJUNCTION WITH A MILD SLACKNESS OF THE FACIAL NERVE AND OF ALL MUSCLE GROUPS ON THE SIDE CONTRALATERAL TO THE SQUINTING EYE. A NUMBER OF SIMPLE AND WIDELY ACCESSIBLE OPHTHALMCNEUROLOGICAL METHODS OF INVESTIGATION ARE SUGGESTED. THESE PERMIT DETECTION OF THE SAID DISTURBANCES AND COLLECTION OF ADDITIONAL INFORMATION AS TO THE STATE OF THE CENTRAL NERVOUS SYSTEM OF THE CHILD IN EACH INDIVIDUAL CASE. FACILITY: OTDEL OKHRANY ZRENIYA DETEY, MOSKOVSKOGO NAUCHNO-ISSLED. INSTITUT GLAZNYKH BOLEZNEY IM. GEL'MGOL'TSA, NAUCHNU-ISSLED. INSTITUT DEFECTOLOGII, AKADEMII PEDAGOGICHESKIKH NAUK SSSR.

UNCLASSIFIED

Radar

USSR

UDC: 621.396.933:527.61:621.396.969.11

EYDLIN, A. A.

"Tracking Reception in Radio Range Finders with Frequency Modulation"

V sb. Tonkiye magnitn. plenki, vychisl. tekhn. i radiotekhn. T. 1 (Thin Magnetic Films, Computer Technology and Radio Engineering. Vol. 1), Krasnoyarsk, 1970, pp 82-86 (from RZh-Radiotekhnika, No 2G75)

Translation: It is shown on the basis of analysis of the functional circuit of a frequency modulated radar with automatic range tracking that to reproduce the law of beat frequency variation used for range measurement with a predetermined accuracy it is sufficient to utilize only the comparatively small portion of the frequency spectrum band which is essential for undistorted transmission of oscillations at the given instant. This band is determined by the necessary accuracy of reproduction of the law of change in beat frequency and the rate of change in the range-measurement frequency. Seven illustrations, bibliography of two titles. N. S.

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USSR

UDC 550.837:622.241

E
EYDMAN, I. YE., Lower Volga Scientific Research Institute of Geology and Geophysics

"An Induction Method of Well Logging"

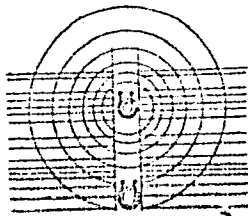
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 19, 1970, Author's Certificate No 272448, Filed 2 Dec 67, pp 62-63

Abstract: This author's certificate introduces an induction method of well logging which consists in studying the electrical conductivity of rocks by exciting an electromagnetic field in the well and measuring the signal of the secondary electrical field. As a distinguishing feature of the patent, the procedure is designed for improving the efficiency of studying oil and gas bearing strata and other anisotropic layers. The electromagnetic field induced in the well is oriented in the rocks surrounding the well in such a way that the secondary field of eddy currents is crosswise to the layering of the rock, and an oriented reception device is used to measure the signal functionally related only to the transverse conductivity of the rock with maximum suppression of interference from the longitudinal component of conductivity.

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USSR

EYDMAN, I. YE., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 19, 1970, Author's Certificate No 272448, Filed 2 Dec 67, pp 62-63



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Miscellaneous

USSR

UDC 669.018.25

IVENSEN, V. A., CHISTYAKOVA, V. A., and EYDUK, O. N., All-Union Scientific Research and Design Institute of Hard Alloy and Refractory Metals

"Investigation of the Change of Properties in Hard Alloy WC-Co During Deformation and Recovery of These Properties During Annealing. Communication I. Effect of Hard Alloy Deformation During Uniaxial Compression on Certain Physical and Mechanical Properties"

Kiev, Poroshkovaya Metallurgiya, No 9, Sep 73, pp 39-45

Abstract: Hard WC-Co alloys were studied to determine the change in properties resulting from preliminary deformation. The main areas studied were relationships of relative resistivity and coercive force to degree of deformation, bend strength to degree of deformation, stress at the start of yield and grain size of tungsten carbide to degree and direction of preliminary deformation, and change in relative width of diffraction lines of carbide and cobalt phase to degree of deformation, all for varying cobalt content. On the whole the investigations showed an essentially varying change of properties during deformation of the alloys with differing cobalt content and carbide grain size. These differences were caused by nonuniform development of strengthening and weakening processes, and the affinity to be slightly weakened during deformation is one of the important properties of the alloy and on the basis of
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USSR

IVENSEN, V. A., et al., Poroshkovaya Metallurgiya, No 9, Sep 73, pp 39-45

which it was suggested that the good performance of coarse-grain alloys under impact loads is determined not only by their increased formability but also by diminished weakening from deformation. 8 figures, 5 bibliographic references.

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USSR

UDC 621.762.001.669

IVENSEN, V. A., EYDUK, O. N., ARTEM'YEVA, S. I., and LUKASHOVA, N. M.

"Plasticity Indicators of Tungsten-Cobalt Hard Alloys As Functions of Temperature of Production of Tungsten and Tungsten Carbide Powders"

Sb. tr. Vses. n.-i. i proyekt. in-t tugoplavk. met. i tverd. splavov
[Collected Works of All-Union Scientific Research and Planning Institute
for Refractory Metals and Hard Alloys], No. 10, 1970, pp. 60-67
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract
No. 2 G414 by the authors)

Translation: The influence of reduction temperature and carburization temperature during production of W carbide on the plasticity of tungsten-cobalt hard alloy is studied. It is established that increasing the carburization temperature causes a greater increase in plasticity of the alloy than increasing the temperature of reduction of W oxides. It is demonstrated that the effect observed results primarily from evaporation of impurities and the production of a more perfect lattice of carbide grains at high temperatures of production of the initial powders.
5 tables.

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USSR

UDC 621.374.335

SHYUSHA, A. S., EYDUKAS, D. I.

"Dynamic Parameters of Logic Circuits and Possibilities of Constructing Equipment for Measuring Them"

Vil'nyus, Nauchnyye trudy vysshikh uchebnykh zavedeniy Lit. SSR. Avtomatika i vychislitel'naya tekhnika (Scientific Works of Institutions of Higher Education of the Lithuanian SSR. Automation and Computer Technology), No 2, 1970, "Mintis", pp 117-126

Abstract: The article deals with the dynamic parameters of logic circuits. Basic methods of constructing measuring equipment in the nanosecond range are analyzed. Block diagrams and basic technical characteristics are presented for a device whose operating principle is based on converting time intervals to amplitude. One table, six illustrations, bibliography of three titles.

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1/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--FORMATION KINETICS OF CLINKER MINERALS IN THE PRESENCE OF ALKALIES
-U-
AUTHOR-(03)-EYDUKS, ^{YA} FREYDENFELD, E., LAGZDINA, S.
COUNTRY OF INFO--USSR ^{probably, Ya.} E
SOURCE--TSEMENT 1970, (1), 17-18
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MINERAL, SODIUM FLUORIDE, ALKALI, SODIUM CARBONATE, CALCIUM
OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1982

STEP NO--UR/0101/70/000/001/0017/0018

CIRC ACCESSION NO--AP0118941

UNCLASSIFIED

2/2 006
CIRC ACCESSION NO--AP0118941

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. THE KINETICS OF BONDING OF CAO WERE STUDIED ON FIRING OF A 3CACO SUB3 PLUS SIO SUB2 MIX AT 000-1450DEGREES IN THE PRESENCE OF NA SALTS, IN ORDER TO INVESTIGATE THE EFFECT OF ALKALINES ON CLINKER FORMATION. NA CL, AND NA SUB2 CO SUB3 AND NA SUB3 PO SUB4 SPEEDED UP THE REACTION AT 900DEGREES AND 1100-1300DEGREES, RESP., WHILE NA SUB2 SO SUB4 AND NAF PROMOTED AN INTENSIVE REACTION THROUGHOUT, AS WAS CONFIRMED BY X RAY, THERMOGRAPHIC, AND IR SPECTROSCOPIC ANALYSES INDICATING THE FORMATION OF A LIQ. PHASE AND MODIFICATION OF THE LATTICE DEFECTS OF THE REACTION PARTNERS.
FACILITY: RIZH. POLITEKH. INST., RIGA, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INFRARED SPECTRA OF SOME FURAN AND 2,5,DIHYDROFURAN DERIVATIVES -U-
AUTHOR-(04)-EYDUS, YA., LOLYA, D.O., VENTERS, K., GRINVALDE, A.
COUNTRY OF INFO--USSR
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (2), 18-25
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, FURAN, ABSORPTION BAND SPECTRUM, ORGANIC NITRO
COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1869 STEP NO--UR/0197/70/000/002/0018/0025
CIRC ACCESSION NO--AP0123657
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123657

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. THE IR SPECTRA OF 2,5,SUBSTITUTED FURANS (I) AND DIHYDROFURAN (II) WERE DETD. I: X, R EQUALS NO SUB2, H; NO SUB2, ME; NO SUB2, COAC; NO SUB2, CH(OAC)SUB2; H, COAC; H, CH(OAC); AND NO SUB2, 2,NITRO,5,FURYL; II: X, R EQUALS NO SUB2, H; NO SUB2, COAC; NO SUB2, CH(OAC) SUB2; AND OAC, H. ALL THESE SPECTRA POSSESS CHARACTERISTIC ABSORPTION AT 1381-1405, 1485-1525, 1571-1605, AND 1421-1034 CM PRIME NEGATIVE1. THE LAST BAND IS ATTRIBUTED TO COC. IN II THIS BAND IS DISPLACED TO 1019-1033 CM PRIME NEGATIVE1. ABSORPTIONS AT 1231 AND 1229, IN II, ARE DUE TO UPSILON SUBAS OF C:O, NOT TO UPSILON SUBAS OF COC. UPSILON SUBS AND UPSILON SUBAS OF NO SUB2, IN I, ARE AT 1340-1360 AND AT 1505-1535 CM PRIME NEGATIVE1. THOSE OF II AT 1380-1382 AND AT 1580-1582 CM PRIME NEGATIVE1, RESP. ABSORPTION OF NO SUB2, AT II, 1380-1382, INTERFERE WITH DELTA SUBS H-C, OF OAC. NO SUB2 IN I DOES NOT CAUSE ANY DISPLACEMENT OF THE BANDS OF CO SUB2 ME, BUT CAUSES DISPLACEMENTS IN II. THE OAC GROUP IS LESS SENSITIVE. ABSORPTION OF ME IS NOT EFFECTED BY NO SUB2, IN BOTH CASES, AND NO RELATION COULD BE ESTABLISHED CONCERNING THE INTERFERENCE OF THE FREQUENCIES OF THESE GROUPS. COC HAS LITTLE INFLUENCE ON THE DELOCALIZATION OF ELECTRONS. THESE PHENOMENA ARE MAINLY DUE TO THE EFFECT OF CONJUGATION.

FACILITY: LATV. GOS. UNIV. IM. STUCKI, RIGA, USSR.

UNCLASSIFIED

USSR

UDC[621.362:538.4]-16:669-404:532.5.001.1

ZIMIN, E.P., EYSMONT, O.A.

"Some Problems Of Laminar Magnetohydrodynamic Flow"

V sb. Teplotekhn.probl.pryamogo preobrazov.energii (Heat-Engineering Problems Of Direct Energy Conversion--Collection Of Works), Issue 2, Kiev, "Nauk.dumka," 1971, pp 87-95 (from RZh--Elektrotehnika i energetika, No 12, Dec 1971, Abstract No 12A185)

Translation: A theoretical study is made of the movement of alternating layers of conducting liquid and nonconducting gas in a transverse magnetic field, and the flow of an inhomogeneous conducting gas in a transverse magnetic field. The effect of turbulent diffusion is evaluated. 3 ill. 3 ref. [Power Engineering Institute im. G.M. Krzhizhanovskiy, Moscow]

1/1

- 125 -

USSR

UDC 616-008.922.1.04-092.9-085.835.3-07:616.12-073.97

YUSHKOV, M. A., SHAL'NEV, B. I., and EYGELES, A. M., Institute of Clinical and Experimental Surgery, Ministry of Health USSR, Moscow

"Electrocardiogram Indicators in Dogs Subjected to Intravenous Administration of Oxygen Microemulsion Under Severe Hypoxia"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 1, Jan/Feb 72, pp 88-90

Abstract: Severe hypoxia in dogs was brought about by a ventilation of lungs with nitrous oxide, or by asphyxia. In conjunction with hypoxia all dogs were given an intravenous injection of oxygen microemulsion. The state of the animal organism under these circumstances was checked by ECG. A ventilation of the lungs with N_2O for 12 min produced the following changes in the ECG: the R was decreased ($P < 0.05$) in 9 min, the S wave increased ($P < 0.05$) in 12 min, the voltage of the T wave increased ($P < 0.001$) in 12 min and the wave changed from 2 mm at the beginning of the experiment to 7 mm. These changes can be attributed to oxygen losses from the microemulsion during its passages through the lung vessels. On the other hand, it is quite possible that oxygen in alveoli was replaced by nitrogen or N_2O , followed by embolism of the lung vessels and the development of myocardial hypoxia. Asphyxia produced changes in the heartbeat by establishing a nodal rhythm for 3 min

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USSR

YUSHKOV, M. A., et al., Eksperimental'naya Khirurgiya i Anesteziologiya, No 1, Jan/Feb 72, pp 88-90

after the start of the experiment, decreased the P wave ($P < 0.05$) to 0.6 mm in 15 min, and increased the P-Q interval ($P < 0.05$). The latter was observed only during the first minute of asphyxia. There were no reliable changes present in the QRS deflection, neither with respect to its duration, nor its voltage during the entire 18 min of asphyxia accompanied by the intravenous injection of oxygen. Under these conditions the most prominent changes were in the T wave dynamics; its voltage increased from the first minute of the experiment and remained at this level. This is attributed to respiratory acidosis. Bleeding of animals during asphyxia and intravenous injection of oxygen produced only insignificant changes in the electrocardiogram.

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- 45 -

USSR

UDC 616.981.455.084(479.24)

AKHUNDOV, M. G., LENCHITSKIY, A. Z., EYGELIS, Yu. K., MAMEDZADE, Yu. A.

"Evaluation of the Effectiveness of Antitularemia Measures in Azerbaydzhan and Problems With Respect to the Prevention of This Disease"

Baku, Azerbaydzhanskiy Meditsinskiy Zhurnal, No 6, 1972, pp 73-78

Abstract: In the Territory of the Azerbaydzhan SSR there are two active natural foci of tularemia: steppe and high-altitude stream. In some parts of the first of these foci, cases of this disease among humans were noted in 1964-1968. A significant number of preventive measures were undertaken in the republic: shooting rodents -- carriers of the disease -- controlling the disease carriers, general sanitation measures and mass vaccination of the population living in the territory of the natural foci.

The authors evaluate each of the indicated elements on the general level of preventive work and note specific problems for the future. The primary ones among these are the following: continuation of careful epizootological examination and investigation of the acquired material; protection of mass-use water supply; continuation of planned vaccination of the population; training of medical personnel; purposeful analysis of the national economic plans for transformation of nature. All of this will permit timely implementation of the measures aimed at protecting the residents of zones endangered by tularemia.

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USSR

ALTYEV, M. N., EYGELIS, YU. K., and LENCHITSKIY, A. Z.

"Epizootiological Zoning of Natural Plague Foci Located in the Azerbaydzhan SSR"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR, Seriya Biologicheskikh Nauk, No 1, 1971, pp 131-135

Abstract: Three natural plague foci are located within the Azerbaydzhan SSR: the focus of the valley-foothill area of Eastern Transcaucasia, the focus in the Transcaucasian mountains, and the focus of the semi-desert area of the Nakhichevan' ASSR. All are shown on a map. The rodent vectors of plague at these three foci are *Meriones erythraurus*, the common vole (*Microtus arvalis*) and Vinogradov's gerbil, respectively. Rodents of other species become infested to some extent with infected fleas and may play a role in epizootics. The regions of the foci consist of a zone in which plague is persistent and surrounding zones in which epizootics are sporadic. In the area of the south-eastern inclines of the Minor Caucasus, where the gerbils *Meriones persicus* and *Meriones tristrami* occur, a culture of *P. pestis* was isolated from the carcass of a dead cat and three strains of *P. pestis* of low virulence were isolated from ticks collected from lambs.

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- 43 -

1/2 032 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--CONVERTERS OF TYPES OF SIGNAL ENERGY IN AUTOMATIC CONTROL SYSTEMS
-U-
AUTHOR--EYGENBROT, V.M. E
COUNTRY OF INFO--USSR
SOURCE--CONVERTERS OF TYPES OF SIGNAL ENERGY IN AUTOMATIC CONTROL SYSTEMS
(PREOBRAZOVATELI RODA ENERGII SIGNALOV V SISTEMAKH AVTOMATICHESKOGO
DATE PUBLISHED-----70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE), ELECTRONICS AND
ELECTRICAL ENGR.
TOPIC TAGS--SIGNAL PROCESSING, ELECTROMECHANIC CONVERTER, AUTOMATIC
CONTROL TECHNOLOGY, PNEUMATIC CONTROL SYSTEM, DIGITAL COMPUTER
APPLICATION, HYDRAULIC EQUIPMENT, ELECTROHYDRAULIC CONVERTER

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0436 STEP NO--UR/0000/70/000/000/0001/0270
CIRC ACCESSION NO--AM0105451
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AM0105451

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: CHAPTER I. CONVERTERS OF TYPES OF SIGNAL ENERGY, AN INDEPENDENT CLASS OF AUTOMATIC DEVICES 3. II. ELECTROPNEUMATIC CONVERTERS 19. III. ELECTROHYDRAULIC CONVERTERS 155. IV. PNEUMATIC ELECTRIC CONVERTERS 216. V. PNEUMATIC HYDRAULIC, HYDROPNEUMATIC AND HYDROELECTRIC CONVERTERS 254. CONCLUSION 258. BIBLIOGRAPHY 265. THE BOOK DEALS WITH DESIGNS AND CALCULATION PRINCIPLES OF CONVERTERS OF TYPES OF ENERGY OF ELECTROHYDRO PNEUMATIC SIGNALS IN AUTOMATIC CONTROL SYSTEMS. GIVEN ARE RECOMMENDATIONS ON SELECTION OF TYPES OF CONVERTERS IN RELATION TO THEIR PURPOSE AND OPERATING CONDITIONS. OF SPECIAL IMPORTANCE ARE SPECIFICATIONS AND THEIR REALIZATION FOR CONVERTERS WORKING IN CONTROL SYSTEMS WHICH UTILIZE DIGITAL CONTROL COMPUTERS. THE BOOK WAS WRITTEN FOR ENGINEERS AND TECHNICIANS WORKING IN THE FIELD OF DESIGN OF CONTROL SYSTEMS AND DEVICES; IT CAN BE USEFUL ALSO TO SENIOR COLLEGE STUDENTS.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--CONVERTERS OF TYPES OF SIGNAL ENERGY IN AUTOMATIC CONTROL SYSTEMS
-U-
AUTHOR--EYGENBROT, V.M. **E**
COUNTRY OF INFO--USSR
SOURCE--CONVERTERS OF TYPES OF SIGNAL ENERGY IN AUTOMATIC CONTROL SYSTEMS
(PREOBRAZOVATELI RODA ENERGII SIGNALOV V SISTEMAKH AVTOMATICHESKOGO
DATE PUBLISHED-----70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE), ELECTRONICS AND
ELECTRICAL ENGR.
TOPIC TAGS--SIGNAL PROCESSING, ELECTROMECHANIC CONVERTER, AUTOMATIC
CONTROL TECHNOLOGY, PNEUMATIC CONTROL SYSTEM, DIGITAL COMPUTER
APPLICATION, HYDRAULIC EQUIPMENT, ELECTROHYDRAULIC CONVERTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0436

STEP NO--UR/0000/70/000/000/0001/0270

CIRC ACCESSION NO--AM0105451

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AM0105451

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: CHAPTER I. CONVERTERS OF TYPES OF SIGNAL ENERGY, AN INDEPENDENT CLASS OF AUTOMATIC DEVICES 3. II. ELECTROPNEUMATIC CONVERTERS 19. III. ELECTROHYDRAULIC CONVERTERS 155. IV. PNEUMATIC ELECTRIC CONVERTERS 216. V. PNEUMATIC HYDRAULIC, HYDROPNEUMATIC AND HYDROELECTRIC CONVERTERS 254. CONCLUSION 258. BIBLIOGRAPHY 265. THE BOOK DEALS WITH DESIGNS AND CALCULATION PRINCIPLES OF CONVERTERS OF TYPES OF ENERGY OF ELECTROHYDRO PNEUMATIC SIGNALS IN AUTOMATIC CONTROL SYSTEMS. GIVEN ARE RECOMMENDATIONS ON SELECTION OF TYPES OF CONVERTERS IN RELATION TO THEIR PURPOSE AND OPERATING CONDITIONS. OF SPECIAL IMPORTANCE ARE SPECIFICATIONS AND THEIR REALIZATION FOR CONVERTERS WORKING IN CONTROL SYSTEMS WHICH UTILIZE DIGITAL CONTROL COMPUTERS. THE BOOK WAS WRITTEN FOR ENGINEERS AND TECHNICIANS WORKING IN THE FIELD OF DESIGN OF CONTROL SYSTEMS AND DEVICES; IT CAN BE USEFUL ALSO TO SENIOR COLLEGE STUDENTS.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--CHEMICAL STABILIZATION OF HYDROCRACKING DISTILLATES -U-

AUTHOR--(04)--EYGENSON, A.S., STEKHUN, A.I., SKLYAR, I.M., CHERTKOV, YA.B.

COUNTRY OF INFO--USSR **E**

SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(2), 1-4

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PURIFICATION, IR SPECTRUM, SPECTROSCOPIC ANALYSIS,
OPTIC PROPERTY, PETROLEUM HYDROCRACKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1117

STEP NO--UR/0065/70/015/002/0001/0004

CIRC ACCESSION NO--AP0054024

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054024

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PURIFICATION OF A HYDROCRACKING DISTILLATE (58.3PERCENT PARAFFINIC NAPHTHENIC AND 31.8 AND 9.9PERCENT MONO AND BICYCLIC AROMATIC HYDROCARBONS) WITH 10PERCENT BY VOL. OF FRESH 86PERCENT H SUB2 SO SUB4 AND ALTERNATIVELY WITH 10PERCENT BY VOL. OF SPENT H SUB 2 SO SUB4 FROM ALKYLATION PROCESSES RESULTED IN REDNS. IN: ACIDITY FROM 5.5 TO 1.8 AND 1.2 MG KOH-100 ML, S CONTENT FROM 0.54 TO 0.32 AND 0.34PERCENT, IODINE NO. FROM 14.7 TO 4.4 AND 3.6 G I-100 G, TAR CONTENT FROM 61.0 TO 7.2 AND 7.6 MG-100 ML, N CONTENT FROM 0.128PERCENT (0.090PERCENT N BASES) TO 0.0028 AND 0.0024PERCENT (0.00011 AND 0/0.00012PERCENT N BASES), AND STABILITY AS MEASURED BY REDNS. IN OPTICAL DENSITY FROM 1.6 TO 0.054 AND 0.075 TAU BEFORE AND FROM 1.85 TO 0.149 AND 0.320 TAU AFTER HEATING 2 HR. AT 140DEGREES IN THE PRESENCE OF CU. GROUP HYDROCARBON COMPN. WAS ALMOST UNCHANGED. REDNS. IN IODINE NO. REFLECTED, NOT REDUCED UNSATD. HYDROCARBON CONTENT, BUT REDUCED HETEROCYCLIC COMPD. CONTENT, WHICH WAS CONFIRMED BY IR SPECTRAL ANAL. OF THE EXTS. WHEN THE VOL. RATIOS WERE REDUCED TO 1:50 AND 1:40, RESP., ALL THE CHANGES WERE SMALLER. THE NONHYDROCARBON MIXTS. IN 3.8PERCENT YIELD BY THIS METHOD CONTAINED 6.58PERCENT S, 3.6PERCENT N, AND 3.49PERCENT O.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--METALWORKING TOOLS STANDARDIZED WITHIN ONE INDUSTRY -U-
AUTHOR-(04)-EYGER, I.S., VYSOKOVSKIY, YE.S., OLSHEVSKIY, E.R.,
YATSKOVSKIY, YU.N.
COUNTRY OF INFO--USSR
SOURCE--STANDARTY I KACHESTVO, 1970, NR 2, PP 48-52
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--TECHNICAL STANDARD, MACHINE TOOL INDUSTRY, CUTTING TOOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/0192

STEP NO--UR/0422/70/000/002/0048/0052

CIRC ACCESSION NO--AP0100716

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100716

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. WORK IN STANDARDIZATION, WITHIN ONE BRANCH OF INDUSTRY, OF METAL CUTTING TOOLS, SUCH AS TURNING AND MILLING CUTTERS, MILLING TIPS, AND SHAVES, IS DESCRIBED. MOST FACTORIES AND OFFICES IN MECHANICAL ENGINEERING WILL FIND THE ARTICLE INTERESTING.

UNCLASSIFIED

1/3 031 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--A DEVICE FOR DIFFERENTIAL DIRECTIONAL PROTECTION WITH AN ULTRASHORT
WAVE COMMUNICATIONS CHANNEL -U-
AUTHOR--BRINKIS, K.A., EYGUS, L.YE., PAPERNO, L.B.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263721
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATZSY, TOVARNYE ZNAKI NO 9,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., ENERGY CONVERSION
(NON-PROPULSIVE)
TOPIC TAGS--PATENT, COMMUNICATION CHANNEL, ELECTRIC POWER TRANSMISSION,
TRANSMISSION LINE, TRIGGER CIRCUIT, COMPARATOR, PULSE SHAPER, ELECTRIC
TRANSFORMER, TRANSISTOR, ELECTRIC PROTECTIVE EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY PEEL/FRAME--1992/1098

STEP NO--UR/0492/70/000/000/0000/0000

CIRC ACCESSION NO--AA0112212

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AA0112212

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES: 1. A DEVICE FOR DIFFERENTIAL DIRECTIONAL PROTECTION WITH AN ULTRASHORT WAVE COMMUNICATIONS CHANNEL FOR ELECTRICAL TRANSMISSION LINES INCLUDING THOSE WITH BRANCHES. THE UNIT CONTAINS A COMBINATION TRIGGER WHICH DISTINGUISHES SYMMETRIC AND ASYMMETRIC SHORT CIRCUITS, A MEASUREMENT UNIT WITH KEYING MODULE, AND A COMPARATOR WITH OUTPUT UNIT. THE UNIT DIFFERS BECAUSE TO INCREASE SPEED AND RELIABILITY AS WELL AS SELECTIVITY IN INCOMPLETE PHASE CONDITIONS, THE MEASUREMENT UNIT CONSISTS OF CURRENT MODULES OF FORWARD AND REVERSE SEQUENCE, AND A COMMON PULSE SHAPER TRANSFORMER WHOSE PRIMARY WINDING IS CONNECTED THROUGH THE TRIGGER OUTPUTS TO THE CURRENT MODULES, WHILE THE SECONDARIES ARE CONNECTED TO THE ULTRASHORT WAVE TRANSMITTER AND THE COMPARATOR. THE COMPARATOR TAKES THE FORM OF AN AND GATE BASED ON DYNISTORS CONNECTED IN THE COLLECTOR CIRCUIT OF A BLOCKING TRIODE CONTROLLED FROM THE CURRENT MODULES AND FROM THE ULTRASHORT WAVE RECEIVER. THE COMPARATOR IS CONNECTED IN TURN TO THE OUTPUT UNIT WHICH TAKES THE FORM OF A KIPP OSCILLATOR WITH POSITIVE FEEDBACK. 2. A MODIFICATION OF THIS DEVICE WHICH DIFFERS BECAUSE THE EFFECT OF TRANSIENT PROCESSES IN THE PRIMARY CIRCUIT AND IN THE SECONDARY CIRCUITS OF THE CURRENT TRANSFORMERS IS REDUCED BY INCORPORATING A SATURABLE TRANSFORMER IN THE CURRENT MODULES OF THE MEASUREMENT UNIT.

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3/3 031

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PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AA0112212

ABSTRACT/EXTRACT--THE PRIMARY WINDING OF A TRANSREACTOR IS CONNECTED THROUGH A HIGH HARMONIC FILTER AND A RESISTOR TO THE SECONDARY WINDING OF THE SATURABLE TRANSFORMER, WHILE THE SECONDARY WINDING OF THE TRANSREACTOR IS CONNECTED AT ONE END THROUGH A DIODE TO THE PRIMARY WINDING OF THE SHAPER TRANSFORMER, AND AT THE OTHER END TO THE COLLECTOR OF A TRANSISTOR WHICH HAS ITS EMITTER JUNCTION CONNECTED TO THE ABOVE MENTIONED RESISTOR. THIS END OF THE WINDING IS ALSO CONNECTED TO THE BASE OF THE RESOLVING TRANSISTOR WHOSE COLLECTOR IS CONNECTED THROUGH A FOLLOWER.

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UNCLASSIFIED

USSR

UDC 621.316.925

BRINKIS, K. A., EYGUS, L. Ye., PAPERNO, L. B., Riga Polytechnical Institute

"A Device for Differential Directional Protection with an Ultrashort-Wave Communications Channel"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, 10 Feb 70, pp 49-50, Patent No 263721, Filed 23 Aug 68

Translation: This Author's Certificate introduces: 1. A device for differential directional protection with an ultrashort-wave communications channel for electrical transmission lines including those with branches. The unit contains a combination trigger which distinguishes symmetric and asymmetric short circuits, a measurement unit with keying module, and a comparator with output unit. The unit differs because to increase speed and reliability as well as selectivity in incomplete phase conditions, the measurement unit consists of current modules of forward and reverse sequence, and a common pulse shaper transformer whose primary winding is connected through the trigger outputs to the current modules, while the secondaries are connected to the ultrashort-wave transmitter and the comparator. The comparator takes the form of an AND gate based on dynistors connected in

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BRINKIS, K. A., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, 10 Feb 70, pp 49-50, Patent No 263721, Filed 23 Aug 68

the collector circuit of a blocking triode controlled from the current modules and from the ultrashort-wave receiver. The comparator is connected in turn to the output unit which takes the form of a kipp oscillator with positive feedback. 2. A modification of this device which differs because the effect of transient processes in the primary circuit and in the secondary circuits of the current transformers is reduced by incorporating a saturable transformer in the current modules of the measurement unit. The primary winding of a transreactor is connected through a high-harmonic filter and a resistor to the secondary winding of the saturable transformer, while the secondary winding of the transreactor is connected at one end through a diode to the primary winding of the shaper transformer, and at the other end to the collector of a transistor which has its emitter junction connected to the above-mentioned resistor. This end of the winding is also connected to the base of the resolving transistor whose collector is connected through a follower.

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--COMPLEXING IN KCL, MCL SUB2, H SUB2 O TERNARY WATER SALT SYSTEMS, M
IS MANGANESE, NICKEL, COBALT -U-
AUTHOR-(02)-EYKHENBAUM, I.G., LESNYKH, D.S.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 516-19
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ISOTHERM, AQUEOUS SOLUTION, POTASSIUM CHLORIDE, WATER, NICKEL
CHLORIDE, COBALT CHLORIDE, MANGANESE CHLORIDE, COMPLEX COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1612 STEP NO--UR/0078/70/015/002/0516/0519
CIRC ACCESSION NO--AP0112606
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112606

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. SOLY. ISOTHERMS ARE CONSTRUCTED FOR KCL-MCL SUB2-H SUB2 O SYSTEMS, WHERE M EQUALS NI, CO, OR MN. THE SYSTEMS OF NICK SUB2 AND COCL SUB2 ARE SIMPLE EUTONIC SYSTEMS BUT THE MNCL SUB2 SYSTEM FORMS THE INCONGRUENTLY SOL. KMNCL SUB3 .H SUB2 O.

UNCLASSIFIED

USSR

UDC 577.1:615.7/9

FADEYEVA, Z. M., and EYKHLER, Yu. N.

"Experimental Data on Combined Action of Butadiene and Alpha-Methylstyrene on Animal Organism"

Nauch. tr. Omsk. med. in-t (Scientific Works of Omsk Medical Institute), 1971, No 107, pp 166-174 (from RZh-Biologicheskaya Khimiya, No 16, 25 Aug 72, Abstract No 16F2125 by D. M. Glukharev)

Translation: Male rats underwent inhalation inoculation with butadiene (I: 99.8 ± 4 mg/cu m) and alpha-methylstyrene (II: 5.2 ± 0.3 mg/cu m) and a determination was made of the amount of Hb, erythrocytes and leukocytes in the peripheral blood, ChE activity, and sulfhydryl-group and nucleic-acid content of the whole blood, as well as prothrombin activity of the blood, the amount of coproporphyrin in the urine, vitamin C, B₁ and B₂ content of the urine, blood and some organs. The administration of I plus II induced a lowering of the quantity of leukocytes and their phagocytic activity, depression of ChE activity, a significant lowering of endogenic liver respiration, an increase in the total sulfhydryl-group content of the blood, elevated excretion of coproporphyrin in the urine, an increase in the amount of ascorbic acid in

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FADEYEVA, Z. M., and EYKHLER, Yu. N., Nauch. tr. Omsk. med. in-t, 1971,
No 107, pp 166-174

the urine and a diminution thereof in the blood and liver and brain tissues,
and a decrease in the thiamine content of the urine and liver and in the
excretion of riboflavin in the urine. The combined action of I and II also
entailed changes in tissue elements and signs of vascular dystonia in
respiratory organs and nervous systems, heart, liver, kidneys (histochemical
analyses).

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1/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE- THEORETICAL PRINCIPLES OF RAILROAD AUTOMATION AND TELEMCHANICS.
SECOND EDITION, REVISED AND SUPPLEMENTED. TEXTBOOK FOR STUDENTS OF
AUTHOR-(051)-BRYLEYEV, A.M., BOSIN, M.I., PEREBOROV, A.S., SMIRNOVA, A.V.,
EYLER, A.A.
COUNTRY OF INFO--USSR *OK E I S*
SOURCE--TEORETICHESKIYE OSNOVY ZHELEZNODOROGZHNOY AVTOMATIKI I
REFERENCE--REFERATIVNYY ZHURNAL AVTOMATIKA, NTELEMEKHANIKA I VYCHISLITEL'
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, ELECTRONICS AND
ELECTRICAL ENGR.
TOPIC TAGS--AUTOMATION, TELEMETRY EQUIPMENT, RAILWAY TRANSPORTATION,
MONOGRAPH, TRANSDUCER, ELECTRIC RELAY, RELIABILITY, COMMUNICATION SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3001/0778

STEP NO--UR/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AP0126469

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--27NOV70

IRC ACCESSION NO--ARO126469

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THIS TEXTBOOK CONSISTS OF 23 CHAPTERS. 1. GENERAL CHARACTERISTICS, INDICATORS AND REQUIREMENTS PLACED ON AUTOMATION, TELEMECHANICS, AND COMMUNICATIONS ELEMENTS. 2. TRANSDUCERS. 3. TYPES OF RELAYS AND THEIR ACTUATING PARTS. 4. ELECTROMAGNETIC DC RELAYS. 5. TRANSIENT PROCESSES IN ELECTRO MAGNETIC RELAYS. 6. POLARIZED RELAYS. 7. AC RELAYS. 8. MAGNETIC ELEMENTS. 9. LOGICAL CONTACTLESS ELEMENTS. 10. BOOLEAN ALGEBRA. SYNTHESIS OF COMBINATION AUTOMATA. 11. SYNTHESIS OF FINITE AUTOMATA. 12. PRINCIPLES OF SELECTION. 13. PRINCIPAL UNITS OF TELEMECHANICAL SYSTEMS. 14. PROBLEMS OF INTERFERENCE STABILITY IN REMOTE CONTROL AND REMOTE SIGNALLING SYSTEMS. 15. TELEMETRY. 16. TYPES OF AUTOMATION. 17. PRINCIPLES OF AUTOMATIC CONTROL. 18. STATIC CHARACTERISTICS OF LINEAR ELEMENTS AND SYSTEMS. 19. DYNAMICS OF LINEAR AUTOMATIC CONTROL SYSTEMS. 20. EQUATIONS OF COMPONENTS AND AUTOMATIC CONTROL SYSTEMS. 21. STABILITY. 22. SYNCHRONOUS COMMUNICATIONS SYSTEMS. 23. RELIABILITY OF ELEMENTS AND SYSTEMS OF RAILROAD AUTOMATION AND TELEMECHANICS. 254 ILLUSTRATIONS, 61 TABLES.

UNCLASSIFIED

USSR



UDC 656.25.001(047)

BRYLEYEV, A. M., BOSIN, M. I., PEREBOROV, A. S., SMIRNOVA, A. V.,
EYLER, A. A.,

"Theoretical Principles of Railroad Automation and Telemechanics.
Second Edition, Revised and Supplemented. Textbook for Students of
Railroad Transport Institutes"

Teoreticheskiye Osnovy Zheleznodorozhnoy Avtomatiki I Telemekhaniki
(English version above) (from Referativnyy Zhurnal Avtomatika, Tele-
mekhanika I Vychislitel'naya Tekhnika, No 2, 1970, Abstract No 2A652K
by I. Sh.)

Translation: This textbook consists of 23 chapters. 1. General
characteristics, indicators and requirements placed on automation,
telemechanics, and communications elements. 2. Transducers. 3.
Types of relays and their actuating parts. 4. Electromagnetic DC
relyas. 5. Transient processes in electro-magnetic relays. 6. Polar-
ized relays. 7. AC relays. 8. Magnetic elements. 9. Logical
contactless elemnts. 10. Boolean algebra. Synthesis of combination
automata. 11. Synthesis of finite automata. 12. Principles of
selection. 13. Principal units of telemechanical systems. 14. Pro-
blems of interference stability in remote control and remote signalling
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BRYLEYEV, A. M., et al., Teoreticheskiye Osnovy Zheleznodorozhnoy Avtomatiki i Telemekhaniki (from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 2, 1970, Abstract No 2A652K by I. Sh.)

systems. 15. Telemetry. 16. Types of automation. 17. Principles of automatic control. 18. Static characteristics of linear elements and systems. 19. Dynamics of linear automatic control systems. 20. Equations of components and automatic control systems. 21. Stability. 22. Synchronous communications systems. 23. Reliability of elements and systems of railroad automation and telemechanics. 254 illustrations, 61 tables.

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USSR

UDC: 621.382.002

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KALINYNYA, R. P., FELTYN', I. A., FREYBERGA, L. A., EGLITIS, I. E.,
AND EYMANIS, I. A.

"Silicon Oxide Films Obtained by Reactive Sputtering of Silicon
in a High-Frequency Plasma"

Riga, Izvestiya Akademii nauk Latvyskov SSR -- Seriya fizicheskikh
i tekhnicheskikh nauk, No 5, 1972, pp 58-65

Abstract: A description is given of the use of reactive sputtering in a high-frequency gas-discharge plasma for the deposition of silicon oxide films. Monocrystalline silicon was used as the source and a high-frequency discharge was employed since they broaden the chemical composition of the film and result in high productivity. The purpose of this paper is to establish a connection between the condition of the films and their electrophysical parameters. The films were grown on silicon substrates set at right angles to the target in an argon-oxygen plasma in which the oxygen content was varied from 0-100%. Further details of film deposition and of the experimental apparatus are given together with the absorption spectra of SiO_2 films and curves illustrating the electrophysical characteristics of the films. The authors are associated with the Physics-Energy Institute, Academy of Sciences of the Latvian SSR.

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USSR

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UDC: 539.293.546.28

FELTYN', I. A., FREYDBERGA, L. A., EGLETIS, I. YE., EYMANIS, I. A.

"Investigation of Metal-Oxide -- Semiconductor Structures with Silicon Dioxide Films Deposited in a High-Frequency Gas-Discharge Plasma"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 2, 1970, pp 48-52

Abstract: By measuring the capacitance of MOS structures, the charge density in the oxide as well as the density and energy distribution of surface states on the oxide-semiconductor interface for MOS structures with silicon dioxide films was determined. The films were applied on p-type silicon substrates by decomposing a mixture of tetraethoxysilane and molecular oxygen in a gas discharge plasma excited by high-frequency (12 MHz) eddy currents inside a pyrex cylinder 30 mm in diameter within a second cylinder 40 mm in diameter. A coolant was circulated between the tubes. The discharge was excited by a 12-turn inductor ($H = 5$ oersteds) wound over the outside cylinder. The substrate surface was cleaned by chemical etching and argon ion bombardment immediately before applying the film. An interference method was used for determining film thickness. The charge density of the films was found to be $(1-5) \cdot 10^{16} \text{ cm}^{-2}$, with constant density of surface states equal to $5 \cdot 10^{15} - 2 \cdot 10^{16} \text{ m}^{-2} \text{ eV}^{-1}$ on the oxide-semiconductor interface. It was found that the films contain no charge which is mobile at room temperature, and the MOS

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FELTYN', I. A., et al., Izvestiya Akademii Nauk Latviyskoy SSR, No 2, 1970, pp 48-52

structures with these films show no hysteresis effect. They are stable for long periods of voltage application.

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EYSMONDT, T. D.

Rolling Steel

EFFECT OF WARM ROLLING ON THE MECHANICAL PROPERTIES OF UNSTABLE CHROMIUM-NICKEL AUSTENITIC STEEL

UDC 669.15669.017.25339.4

Article by I. N. Borachev, I. B. Eysmond, A. V. Furman, Ural Polytechnic Institute, Lenin St. 79, Moscow, 125191, Metallurgy, 1971, No 3, 1967, submitted 8 October 1971, pp 1034-1041

A study was made of the possibility of increasing the set of mechanical properties of unstable chromium-nickel austenitic steel by deformation in the 300-500° C range. Along with an increase in the strength properties, the warm rolling leads to an increase in the plastic properties of the steel with active development of martensitic conversion with deformation. This is connected with stabilization of the austenite with respect to phase transformations. After warm rolling the amount of alpha-phase in the test process increases gradually with an increase in the degree of deformation which insures good plasticity of these steels.

Warm deformation is widely used for strengthening austenitic steel [1-3]. The majority of studies in this area have been made on chromium-nickel steel. In this paper a study has been made of the effect of warm rolling in the temperature range of 300-550° on the mechanical properties of unstable austenitic chromium-nickel steel. The level of the mechanical properties (yield) of the unstable austenitic steels depends to a high degree on the intensity of development of the martensitic conversion during testing. Accordingly, a study is made of the effect of the temperature and degree of preliminary deformation on the development of the martensitic transformation with subsequent deformation.

Experimental Data and Procedure

A study is made of the steel having different stability of the austenite, the content of carbon and the content of the carbide-forming element -- chromium (Table 1).

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U.S. 583570
1964
Steel

Table 1

Type of steel	C	Cr	Mn	Si	S	P
30Kh2G10	0.34	2.20	10.88	0.35	—	—
30Kh16G10	0.32	16.20	10.88	0.41	0.0001	0.0001
47Kh10GB	0.47	9.81	8.80	0.30	—	—
60G7	0.60	0.19	6.81	0.30	—	—
20Kh10G10	0.20	11.00	11.10	0.30	0.015	0.015

The steel was made in an induction furnace. After homogenizing annealing, the ingots weighing 8 kg were forged into bars which went through the austenizing stage at 1,100° with subsequent cooling in water. The deformation was realized by rolling on a roll pass mill in the 300-550° range. The heating of the specimens to the deformation temperature and heating them during rolling took place in a salt bath. The billets 10 x 10 mm in cross section were rolled, then specimens were made from them for mechanical testing.

The effect of the temperature and degree of preliminary deformation on the development of the $\gamma \rightarrow \alpha$ transformations during subsequent deformation was studied on a 20Kh10G10 steel wire. The deformation was realized by twisting.

The amount of α -phase formed during deformation was determined using the Shelyshev-Zyuzin ballistic magnetometer. An amco iron sample was used as the standard. The effect of the alloying elements on the magnetic saturation of the investigated steel was considered for the calculation. The relative α -phase content was estimated by varying the density ρ_0/ρ as a result of the $\gamma \rightarrow \alpha$ transformation [4]. The mechanical properties were determined using specimens 3 mm in diameter and with $l_0 = 20$ mm on the IX-4R machine.


Results and Discussion of the Results

The amount of α -martensite formed in the steel during plastic flow by torsion is illustrated in Figure 1. For steel with 0.3 percent C (30Kh2G10 and 30Kh16G10) an increase in the chromium content leads to stabilization of the austenite with respect to $\gamma \rightarrow \alpha$ conversion during deformation. Thus, after 15 percent deformation in 30Kh2G10 steel, 29 percent α -phase is formed; in 30Kh16G10 steel, 1 percent. Torsion fracture of 30Kh2G10 steel with intense formation of deformation martensite takes place at 17 percent deformation; for 30Kh16G10 steel in which the amount of α -phase gradually increases with an increase in the degree of deformation it takes place at 40 percent. The mechanical properties of this steel after quenching and preliminary warm rolling are presented in Table 2.

The increase in chromium content in steel with 0.3 percent C somewhat exceeds the yield point of 0.2 after quenching (from 41 to 46.2 kg/mm²); the ultimate strength σ_n increases sharply in this case: from 57.7 kg/mm² for 30Kh2G10 steel to 97.1 kg/mm² for 30Kh16G10 steel. The formation of a large amount of deformation martensite in the first steel during mechanical testing

USSR

UDC 669.1:539.292

 BUTAKOVA, E. D., EYSMONDT, T. D., and MALYSHEV, K. A., Institute of Physics of Metals, Academy of Sciences USSR

"Influence of Chromium and Nickel on Martensite Conversion During Deformation and the Mechanical Properties of Fe-Ni-Cr Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 3, Mar 71, pp 574-577

Abstract: In Fe-Ni and Fe-Ni-Cr alloys, a decrease in the content of nickel and an increase in the content of chromium cause activation of the martensitic conversion during deformation. It is assumed that activation of the conversion is related to packing defects which develop during deformation and serve as seeds of the martensite.

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USSR

UDC 669.15.018.44

BOGACHEV, I. N., MALINOV, L. S., EYSMONDT, T. D.

"Role of Martensitic Conversion During Deformation in Work Hardening Unstable Austenitic Steels"

Povysh. konstruktivn. prochnosti stalev i splavov. No 1 -- V sb. (Improving the Structural Strength of Steels and Alloys. No 1 -- collection of works), Moscow, 1970, pp 126-129 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 41653

Translation: During deformation of unstable austenitic steel, martensitic conversion which hardens the steel still further takes place. The effect of plastic flow at various temperatures on the mechanical properties of OKh13AG8 and 30Kh10G10 steels was investigated. The expediency of using a number of successive deformations with intermediate heating to improve the properties of the steel was demonstrated.

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